SAMSUNG

ECO HEATING SYSTEM

	OUTDOOR UNIT	CONTROL KIT
Model :	RC160MHXGA RC140MHXGA RC120MHXGA RC160MHXEA RC140MHXEA RC120MHXEA RC090MHXEA	MIM-E03A

SERVICE *Manual*

ECO HEATING SYSTEM

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Refer to the service manual in the GSPN(see the rear cover) for the more information.

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1. Precautions

1-1 Precautions for the Service

- **Use the standard parts when replacing the electric parts.**
  – Confirm the model name, rated voltage, rated current of the electric parts.

- **When repairing the equipment, connection of the harness parts must be firm and solid.**
  – A loose connection may cause noise or other malfunction.

- **When assembling and disassembling the equipment while it is laid down, lay it on soft cloth.**
  – Otherwise it may scratch the back of the exterior of the product.

- **Remove dust or dirt completely from the housing block, wiring block and service parts during repair.**
  – This helps prevent the danger of fire caused by tracking or short circuit.

- **Fasten the valve caps of service valves and charging valves of outdoor unit as much as possible using adjustable wrenches.**

- **Check the status of the components' assembly after repair service.**
  – The status must be the same as before the repair service.

1-2 Precautions related to static electricity and PL

- **The PCB power supply block is susceptible to static electricity. Therefore, care must be taken during repair or measuring while the power is on.**
  – Wear insulation gloves for PCB repair or measuring.

- **Check whether the installation location is at least two meters away from other electronic products such as TV, video, or audio.**
  – Otherwise, the video quality might be degraded or noise might be generated.

- **Do not let end users repair the products themselves.**
  – Unauthorized disassembly might cause electric shock or fire.

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1-3 Precautions for the Safety

- **Do not pull any electric wires and do not touch an auxiliary power switch with a wet hand.**
  – There is a danger of electric shock or fire.
- **In case any wire or power plug has been damaged, replace it to eliminate any possible danger.**
- **Do not bend the power cord by force and do not put any heavy object on the power cord.**
  – There is a danger of electric shock or fire.
- **Do not use multi socket.**
  – There is a danger of electric shock or fire.
- **Ground the product if necessary.**
  – Be sure to ground the product if there is any danger of electric leakage due to water or moisture.
- **Be sure to turn off the auxiliary power switch or pull out the power plug during replacement or repair of electric parts.**
  – There is a danger of electric shock.
- **In case the product will not be in use for a long time, the battery of remote control should be kept separately.**
  – Leakage of inside fluid can cause break down of remote control.
- **The installation must be done by the manufacturer or its service agent or a similar qualified person in order to avoid a hazard.**
  – Installation by an unqualified person may cause a water leakage, electric shock or fire and so on.
- **The electric work must be done by service agent or similarly qualified persons according to national wiring regulations and use only rated cable.**
  – If the capacity of the power cable is insufficient or electric work is not properly completed, electric shock or fire may occur.
- **Use only rated parts and tools.**
  – If you don't use the rated parts and tools, it can cause trouble with the air conditioner and bring about injury.
- **If any gas or impurities except R410A refrigerant come into the refrigerant pipe, serious problem may occur and it may cause injury.**
- **Leak test must be done using only Nitrogen(NO_2)gas.**

- R410A refrigerant is used for EHS.
  – When using R410A, moisture or foreign substances may affect to the capacity and reliability of the product.Safety precautions must be taken when installing the refrigerant pipe.
  – The design pressure of the unit is 4.1MPa. Select appropriate material and thickness according to the regulations.
  – R410A is a quasi-azeotrope of two refrigerants.
  Make sure to charge liquid one when adding refrigerant.
  If you charge gaseous refrigerant, it may affect the capacity and reliability of the product as a result of change formation of the refrigerant.

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1-4 Precautions for handling a system containing refrigerants

All system containing refrigerants shall be removed under regional regulations prior to the disposal to prevent the potential health and environmental consequences.

- **Harmful for human body**
  – When emitted liquid refrigerant contacts human body, contacted area may get frostbite, blister or become numb.
  If refrigerant leaks in airtight area, lack of oxygen may cause suffocation. When refrigerant is heated, it may generate harmful gas.
- **Precautions for handling container**
  – Do not apply shock or heat to the refrigerant container.

1-5 Precautions for the brazing

- **Clear any dangerous or inflammable materials in surrounding environment.**
- **Make sure to empty the remaining refrigerant in the product or pipe before brazing.**
  – Brazing with the refrigerant still remaining in the product or pipe may cause poor result and generate harmful gas. Furthermore, pressure of the refrigerant may increase and cause damage to the leaking part. This may lead harmful refrigerant and oil to spurt out which can be dangerous for service personnel.
- **Use nitrogen gas to get rid of the oxide forming during brazing.**
  – Using other type of gas may cause damage to the product or the exterior.

1-6 Precautions for charging refrigerants

- **Add quantity of the refrigerant using a scale and perform a test operation with S-net.**
  – Product performance may decrease if you add excessive amount of refrigerant.
- **Do not charge refrigerants while heating the container up.**
  – The container may get damaged by the heat and result in explosions.
- **Do not operate the product without pressure switch(for product protection) and sensor.**
  – If there are any internal blockage, high refrigerant pressure increase may damage the product or exterior.

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2. General Overview

2-1 Features of the System

Summarize

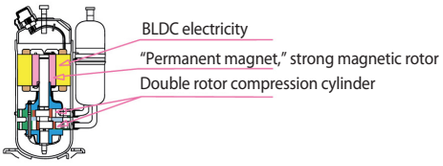
Overview

EHS(Eco Heating System) is an integrated system with plate heat exchanger. This system provides customers lots of convenience such as Energy savings, Easy installation, and Comparable installation cost

POWER SAVING **EHS(Eco Heating System)** considers the trend in air conditioner use. It optimizes the energy efficiency of loads ranging from partial to full. It achieves an excellent energy effect for the users of the air conditioner.

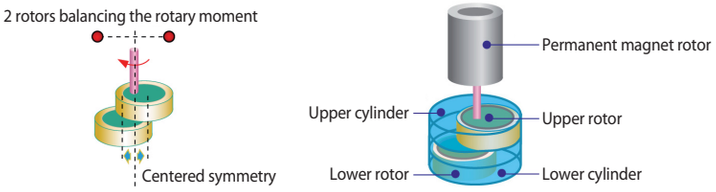
Samsung patented compressor

Samsung has been researching and developing compressors since the 70's.
It has developed power saving compressors for more than thirty years.
The **EHS(Eco Heating System)** compressor adopts a double-rotor BLDC compressor with permanent magnets made by Samsung.
Electricity for the compressor rotor is obtained from a neodium-iron-boron permanent magnetic material (boron magnet can attract iron material weighing 1000 times its own weight.) It strengthens the rotary moment of the compressor to maximize the entire efficiency of the compressor.



Nd-Fe-B Neodium-Iron-Boron magnet

SAMSUNG's double-rotor compressor has the upper and lower rotors designed symmetrically.
The double rotor in symmetry can remove vibrations caused by the eccentric design of the cylinder.



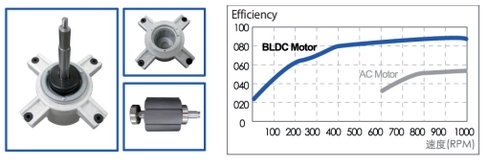
High efficiency heat exchanger

EHS(Eco Heating System) uses new multiple-teeth screw pipes with a diameter of 8 mm to improve the heat exchangeability of the pipe by **30.8%**.

The water-friendly aluminum foil in the heat exchanger uses the G-fin patent design to improve the efficiency of heat exchange by **13%**.

DC fan electricity

The **EHS(Eco Heating System)** outdoor machine uses DC fan electricity. The rotational speed of electricity is 100 RPM to 1050 RPM with step-free control. The electrical efficiency is improved by about **33%** compared to AC electricity.



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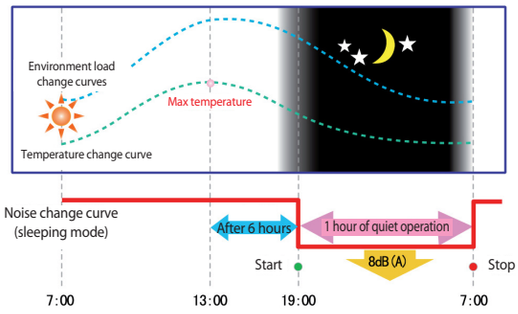
Quiet night

EHS(Eco Heating System)'s outdoor machine can be set to quiet nighttime operation mode. The outdoor machine executes quiet operation (sleeping mode) after six hours. After 12 hours, it returns to the previous mode automatically.



2-1-1 Key features of the Monobloc

■ Running Costs-Reduction of Up to 33.3%

Samsung EHS, known for its world class efficiency (11kW floor heating system with COP of 4.55), can reduce 33.3% of your running costs as compared to a gas boiler.

■ Price and Space Reduction of Up to 50%

With an all-in-one outdoor unit capable of both air-to-water and air-to-air functions, Samsung EHS saves you in terms of the low initial purchase price & installation fee as well as the space needed for an extra outdoor unit.

■ High Performance at Low Temperature

Samsung EHS is made up of an inverter compressor optimally operated according to the outdoor temperature, offering heating performance of 90% at -10°C and reliable antifreezing protection at -20°C.

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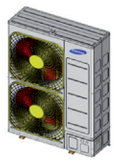
2-2 Product Specifications

2-2-1 Hydro Unit

Item				RC160MHXGA	RC140MHXGA	RC120MHXGA	MIM-EO3A
				3phase 16kW	3phase 14kW	3phase 12kW	
Image		Outdoor unit					
		Control Kit					
		Remote Controller					
Capacity (95%↑)		Heating 1	W	16,000	14,000	12,000	-
		Heating 2	W	15,100	13,100	11,400	-
		Cooling 1	W	17,000	16,000	13,500	-
		Cooling 2	W	13,100	12,500	10,000	-
POWER CONSUMPTION (110%↓)		Heating 1	W	3,810	3,220	2,610	-
		Heating 2	W	4,580	3,850	3,260	-
		Cooling 1	W	5,710	5,250	3,910	-
		Cooling 2	W	5,240	5,000	3,700	-
Running Current (110%↓)		Heating 1	A	6.0	5.1	4.1	-
		Heating 2	A	7.2	6.0	5.1	-
		Cooling 1	A	9.0	8.2	6.1	-
		Cooling 2	A	8.2	7.8	5.8	-
Power Supply			Ø,V,Hz	3/380-415/50	3/380-415/50	3/380-415/50	1/187~265/50
COP/EER (95%↑)		Heating 1	W/W	4.20	4.35	4.60	-
		Heating 2	W/W	3.30	3.40	3.50	-
		Cooling 1	W/W	2.98	3.05	3.45	-
		Cooling 2	W/W	2.50	2.50	2.70	-
Refrigerant Charge			g, type	2,200 R410A	2,200 R410A	2,200 R410A	-
Set Dimensions (W*H*D)		Net	mm	940X1,420X330	940X1,420X330	940X1,420X330	
		Gross	mm	995X1,548X426	995X1,548X426	995X1,548X426	
		Weight (Net/Gross)	kg	103 / 113	103 / 113	103 / 113	35 / 5.5
Noise	Cooling	Cond.1/2	dB(A)	62	62	62	-
	Heating	Cond.1/2	dB(A)	64	64	64	-
Operation range		Cooling	℃	10~46	10~46	10~46	-
		Heating	℃	-20~35	-20~35	-20~35	-

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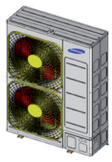
Product Specifications (cont.)

Item				RC160MHXEA	RC140MHXEA	RC120MHXEA	RC090MHXEA
				1phase 16kW	1phase 14kW	1phase 12kW	1phase 9kW
Image	Outdoor unit						
	Control Kit						
	Remote Controller						
Capacity (95%↑)	Heating 1	W		16,000	14,000	12,000	9,000
	Heating 2	W		15,100	13,100	11,400	8,400
	Cooling 1	W		17,000	16,000	13,500	10,000
	Cooling 2	W		13,100	12,500	10,000	7,500
POWER CONSUMPTION (110%↓)	Heating 1	W		3,810	3,220	2,610	2,090
	Heating 2	W		4,580	3,850	3,260	2,510
	Cooling 1	W		5,860	5,330	4,070	2,860
	Cooling 2	W		5,350	5,060	3,770	2,730
Running Current (110%↓)	Heating 1	A		17.1	14.4	11.7	9.9
	Heating 2	A		20.5	17.3	14.6	11.9
	Cooling 1	A		25.5	23.2	17.7	13.5
	Cooling 2	A		23.3	22.0	16.4	12.9
Power Supply COP/EER (95%↑)		Ø,V,Hz		1/220-240/50	1/220-240/50	1/220-240/50	1 / 220-240 / 50
	Heating 1	W/W		4.20	4.35	4.60	4.30
	Heating 2	W/W		3.30	3.40	3.50	3.35
	Cooling 1	W/W		2.90	3.00	3.32	3.50
	Cooling 2	W/W		2.45	2.47	2.65	2.75
Refrigerant Charge		g, type		2,200 R410A	2,200 R410A	2,200 R410A	1,400 R410A
Set Dimensions (W*H*D)	Net	mm		940X1,420X330	940X1,420X330	940X1,420X330	940X998X330
	Gross	mm		995X1,548X426	995X1,548X426	995X1,548X426	995X1,096X426
	Weight (Net/Gross)	kg		103 / 113	103 / 113	103 / 113	75 / 83
Noise	Cooling	Cond.1/2	dB(A)	62	62	62	60
	Heating	Cond.1/2	dB(A)	64	64	64	63
Operation range	Cooling	℃		10~46	10~46	10~46	10~46
	Heating	℃		-20~35	-20~35	-20~35	-20~35

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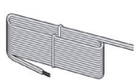
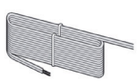
2-3 Specifications of optional items

2-3-1 Accessories

Item	Description	Code No.	Q'ty	Remark
	Cap Drain	DB63-10355C	3	Essential Offer (Outdoor Unit)
	Drain Plug	DB67-00806A	1	
	Rubber Leg	DB73-20134A	4	
	ASSY-INSTALLATION MANUAL (Outdoor Unit)	DB98-34411A	1	Essential Offer (Panel)
	ASSY-USER MANUAL	DB98-34412A	1	
	ASSY-INSTALLATION MANUAL (Control Kit)	DB98-34413A	1	
	Switch-Flow	DB34-00079A	1	Essential Offer (Control Kit)
	Wired remote controller	DB93-09348A	1	
	Connector Wire (Smart Grid, 2000mm)	DB93-13255A	1	
	Connector Wire (Remote controller, 10,000mm)	DB93-13332A	1	
	Thermistor (Back-up Heater)	DB95-05022A	1	
	Thermistor (Water Tank)	DB95-05023A	1	

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3. Disassembly and Reassembly

■ Hand Tool sets

Item	Remark
+Screw Driver	
Adjustable wrench	
–Screw Driver	
Nipper	
Electric Motion Driver	
L-Wrench	
Torque Lench	
Latchet Lench	

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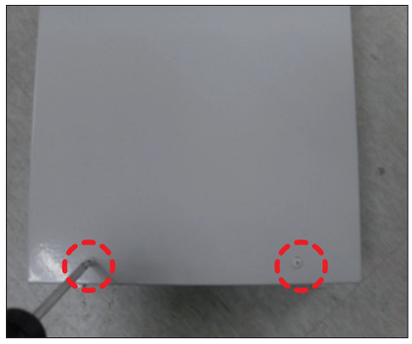
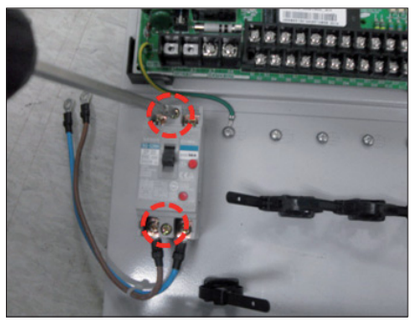
3-1 EHS Control Kit

Be sure that the power switch is in the "OFF" and the power source cord shall be unplugged prior to disassembly and reassembly works.

No	Parts	Procedure	Remark
1	CABINET TOP	⚠ You must turn off the Power before disassembly. 1) Unscrew and remove 2 mounting screw in the Cabinet top. (Use +Screw Driver) 2) Open the Cabinet top from the bottom.	
2	ELCB	1) Unscrew and remove 2 screws of Power supply cable on the Terminal block. (Use +Screw Driver) 2) Unscrew and remove 2 screws on top & bottom of the ELCB. (Use +Screw Driver)	 

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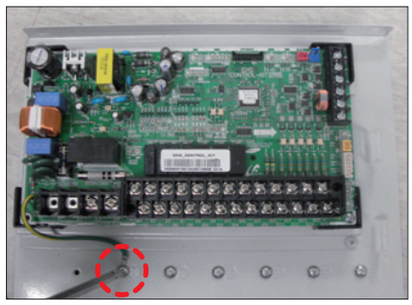
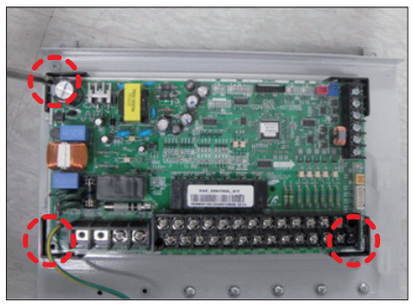
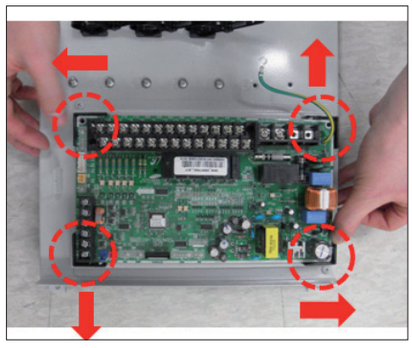
No	Parts	Procedure	Remark
3	ASSY PCB MAIN OUT	1) Unscrew and remove 1 earth screw on the cabinet bottom. (Use +Screw Driver)	
		2) Unscrew and remove 3 screws on the PCB. (Use +Screw Driver)	
		3) Pull the PCB support to each direction. ⚠ Please note that PCB support may be brocken by your excessive pulling.	

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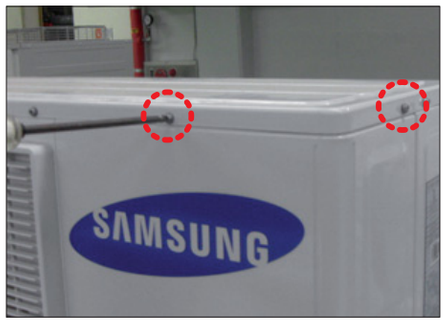
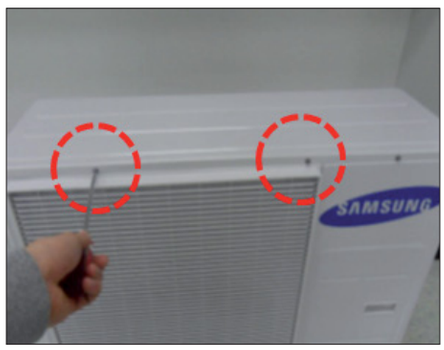
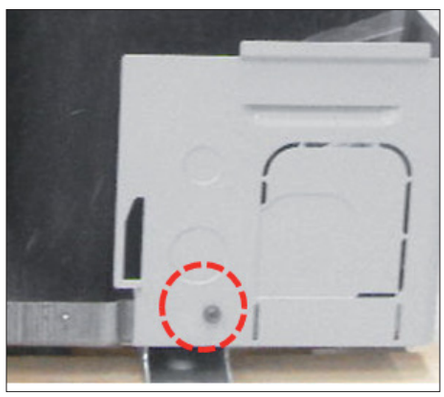
3-2 Outdoor Unit

■ RC090MHXEA

No	Parts	Procedure	Remark
1	Cabi Front RH	⚠ You must turn off the Power before disassembly. 1) Unscrew and remove 3 mounting screw in the Cabinet Front RH. (Use +Screw Driver)	
2	Cabi Top	1) Unscrew and remove 9 screws on each side of the Cabinet-Top. (Use +Screw Driver)	
3	Cabi Install Front	1) Unscrew and remove 1 screw in the Cabinet-Install Front. (Use +Screw Driver)	

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No	Parts	Procedure	Remark
4	Guard Cond	1) Pull the sensor from Guard Cond.	
		2) Unscrew and remove 4 screws in the Guard Cond. (Use +Screw Driver)	

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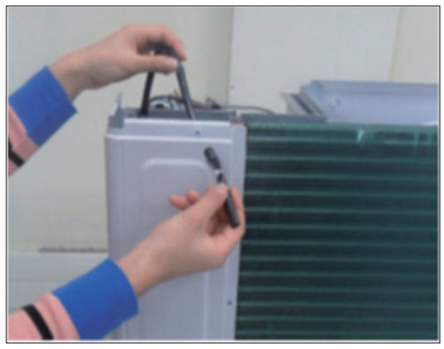
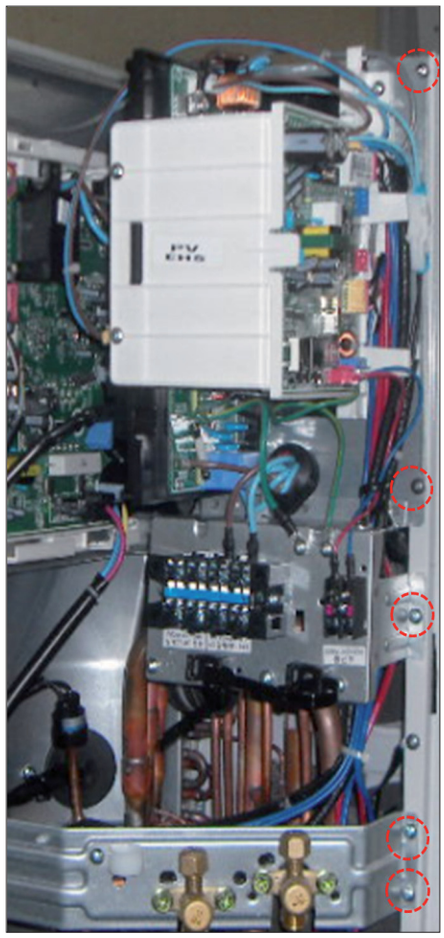
No	Parts	Procedure	Remark
5	Cabi Back RH	1) Pull the sensor from Cabi Back RH.	
		2) Unscrew and remove 9 screws on each side of the Cabinet Back RH. (Use +Screw Driver)	

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No	Parts	Procedure	Remark
6	Cabi Install Back	1) Unscrew and remove 8 screws in the Cabinet-Front LF. (Use +Screw Driver)	

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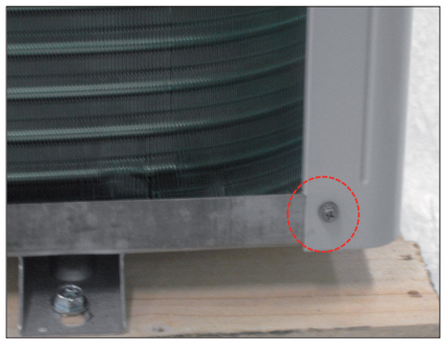
No	Parts	Procedure	Remark
			

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No	Parts	Procedure	Remark
7	Fan	1) Turn 2 mounting nuts as shown in the picture and remove it. (Use Adjustable Wrench)	

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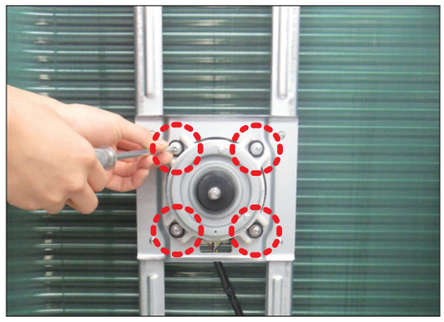
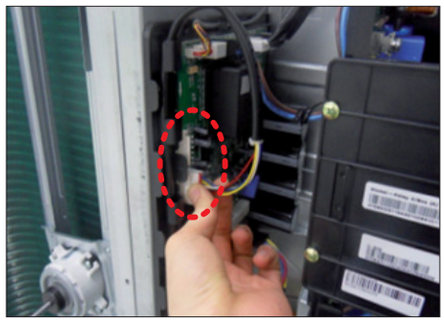
No	Parts	Procedure	Remark
8	Motor	1) Separate the Fan Propeller. 2) Unscrew and remove the 8 Motor mounting screws. (Use +Screw Driver)	
		3) Disconnect the Motor wire From Ass'y Control Out.	

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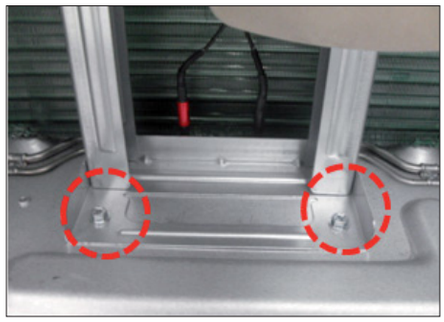
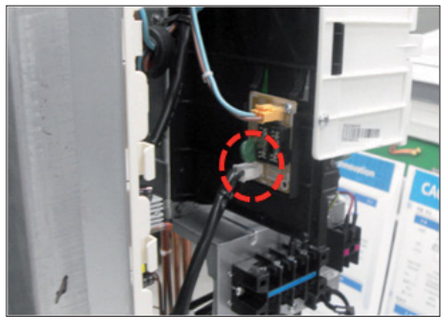
No	Parts	Procedure	Remark
9	Bracket Motor	1) Unscrew and remove 2 mounting screws in Bracket Motor. (Use +Screw Driver)	
10	Heater	1) Unscrew and remove 3 mounting screws in Bracket Motor. (Use +Screw Driver)	
		2) Disconnect the heater wire from Ass'y Control Out.	

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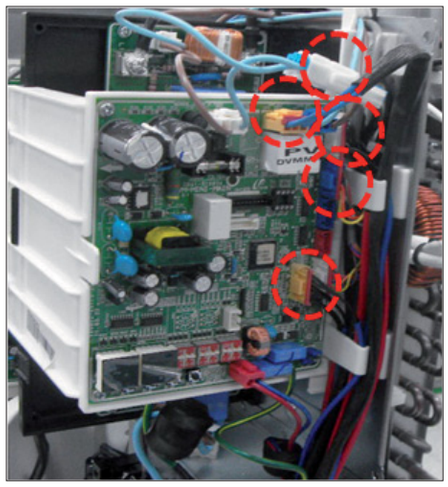
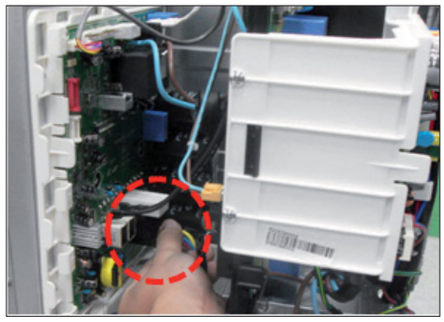
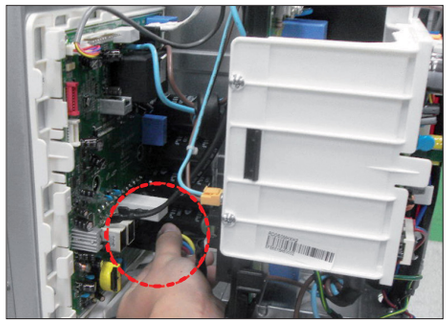
No	Parts	Procedure	Remark
11	Control Out	1) Disconnect 6 Connecters From Ass'y Control Out. 2) Unscrew and remove 3 mounting screw in Control Out. (Use +Screw Driver) 3) Separate Ass'y Control Out.	  

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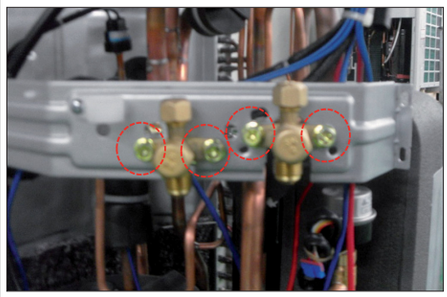
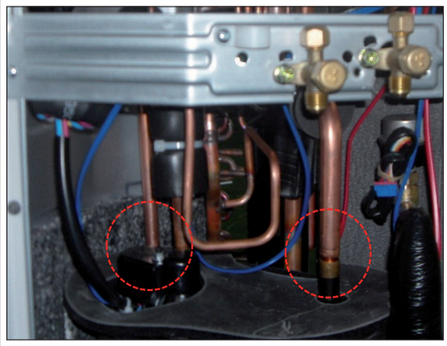
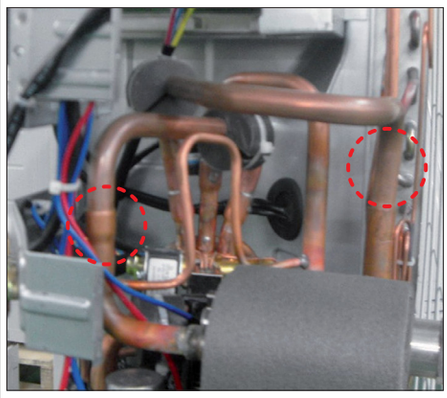
No	Parts	Procedure	Remark
12	Ass'y 4way Valve	1) Purge the Coolant first. 2) Unscrew and remove 4 mounting screws in Service Valve. (Use +Screw Driver)	
		3) Separate the pipe from the Entrance/Exit using a welder.	
		⚠ When removing the compressor, Heat Exchanger, and Pipe, purge the completely and remove the pipe with a welding flame.	

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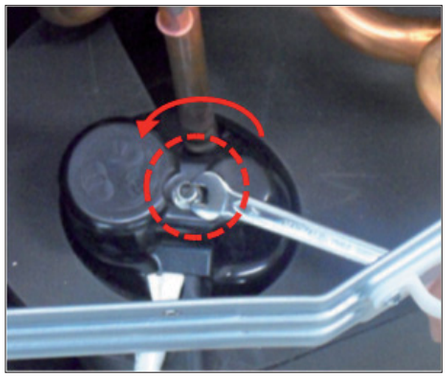
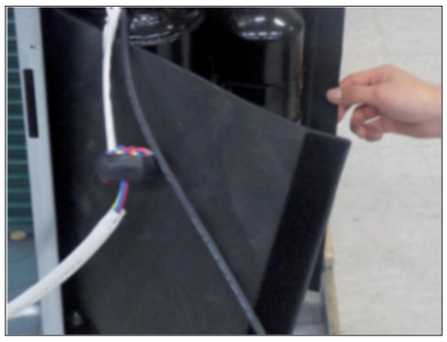
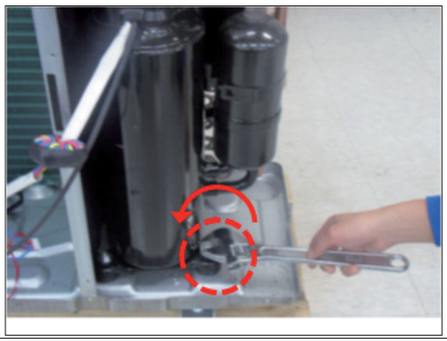
No	Parts	Procedure	Remark
13	Compressor	1) Unscrew and remove 1 mounting nut in Cover Terminal. (Use Adjustable Wrench)	
		2) Separate the Comp wire.	
		3) Separate the Compressor Felt Sound.	
		4) As shown in the picture, unscrew and bottom. (Use Adjustable Wrench)	 

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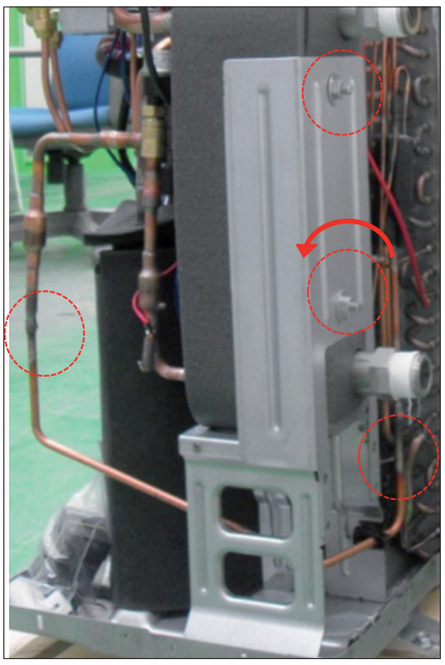
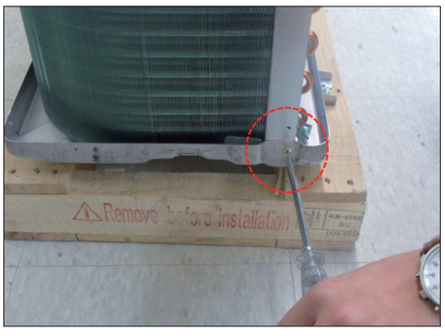
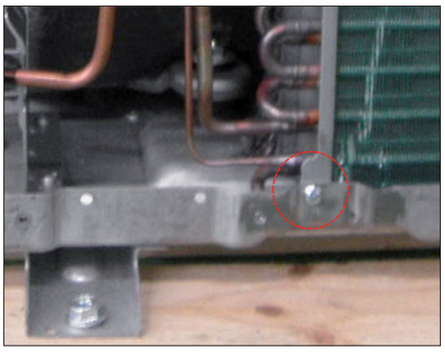
No	Parts	Procedure	Remark
14	Ass'y PHE	1) Separate the pipe from the Entrance/Exit using a welder. 2) As shown in the picture, unscrew and remove 2 mounting screws from the bracket PHE. (Use Adjustable Wrench)	
15	Assy Cond Out	1) Unscrew and remove 2 screws on each side of the Assy Cond Out. (Use +Screw Driver)	 

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4. Troubleshooting

4-1 Wired remote controller

- If an error occurs, (TEST) icon will be displayed on the wired remote controller.
- Press the Test button to see the error code.

Error mode	Contents	Measure	Product operation in error condition	Error type
			Outdoor unit/ Compressor/Indoor unit	
101	Indoor unit communication error	Check the communication cable of indoor unit. Check the DC output voltage at the communication terminal	Operation Off	Communication error
102	Indoor unit/outdoor unit communication time-out error: errors in more than 6 packets	Check the outdoor communication cable connection. Check DC output voltage and the communication terminal	Operation Off	Communication error
121	Indoor temperature sensor (open/short error)	Check indoor unit room temperature sensor. Check indoor unit PCB connector CN41 (White)	Operation Off	Indoor sensor error
122	Indoor unit Eva In sensor (Open/Short)	Check indoor unit pipe sensor. Check indoor PCB connector CN41(White)	Operation Off	Indoor sensor error
128	Indoor unit Eva In sensor disconnection	Check the disconnection of indoor unit pipe sensor	Operation Off	Indoor sensor error
153	Indoor floating switch secondary detection	Check indoor unit float sensor. Check indoor PCB connector CN5 (black)	Operation Off	Self diagnostic error
202	Indoor/outdoor communication error (1 min)	Check the communication connection between indoor and outdoor units. Check the power line and communication cable connection status	Operation Off	Communication error
203	Communication error between indoor/outdoor INV↔MAIN MICOM (1 min)	Check MAIN MICOM Check INVERTER MICOM	-	Communication error
221	Outdoor temperature sensor error	Check sensor connection status Check sensor location Check sensor resistance	Operation Off	Outdoor sensor error
237	COND temperature sensor error	Check sensor connection status Check sensor location Check sensor resistance	Operation Off	Outdoor sensor error
251	[Inverter] Emission temperature sensor error	Check sensor connection status Check sensor location Check sensor resistance	Operation Off	Outdoor sensor error
416	Emission temperature excessively high	No error (DISCHARGE temperature control)	-	Outdoor unit protection control error
440	Heating operation blocked	Check the operation setting state Check temperature sensor	Operation Off	Self diagnostic error
441	Cooling operation blocked	Check the operation setting state Check temperature sensor	Operation Off	Self diagnostic error
458	Outdoor fan 1 error	Check input power connection status Check the connection status between the motor and outdoor unit PCB Check indoor/outdoor fuse	Operation Off	Self diagnostic error
461	[Inverter] Compressor startup error	Check the compressor connection status Check the resistance between difference phases of the compressor	Operation Off	Outdoor unit protection control error
462	[Inverter] Total current error/ PFC over current error	Check the input power Check the coolant charging status Check the normal operation of outdoor fan	Operation Off	Outdoor unit protection control error

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Wired remote controller (cont.)

Error mode	Contents	Measure	Product operation in error condition	Error type
			Outdoor unit/ Compressor/Indoor unit	
464	[Inverter] IPM over current error	Check coolant charging Check the compressor connection status and normal operation Check the obstacles around the indoor and outdoor units Check whether the outdoor unit service valve is open Check whether the indoor/outdoor installation pipe/ wiring are correct	Operation Off	Outdoor unit protection control error
465	Compressor V limit error	Check the compressor connection status Check the resistance between difference phases of the compressor	Operation Off	Outdoor unit protection control error
466	DC LINK over/low voltage error	Check input power Check AC power connection	Restart in 3 minutes	Outdoor unit protection control error
467	[Inverter] Compressor rotation error	Check the compressor connection status Check the resistance between difference phases of the compressor	Operation Off	Outdoor unit protection control error
468	[Inverter] Current sensor error	Check EEPROM DATA Check the normal operation of PCB	Operation Off	Outdoor unit protection control error
469	[Inverter] DC LINK voltage sensor error	Check the input power connection Check the status of RY21 and R200 in the INVERTER PCB	Operation Off	Outdoor unit protection control error
401	[Inverter] OTP error	Check EEPROM DATA Check the normal operation of PCB	Operation Off	Outdoor unit protection control error
402	AC ZERO CROSSING SIGNAL OUT error	Check the input power status	Operation Off	Outdoor unit protection control error
403	Compressor LOCK error	Check the compressor connection status Check the resistance between difference phases of the compressor	Operation Off	Outdoor unit protection control error
405	Outdoor fan 2 error	Check the input power connection status Check the connection status of the motor and the outdoor unit PCB Check the indoor/outdoor unit fuse	Operation Off	Self diagnostic error
554	Gas leak error	Check the coolant charging status Check the indoor EVA sensor Check if the outdoor unit service value is open Check that the indoor/outdoor installation pipe/wiring are correct	Operation Off	Self diagnostic error
556	Capacities not matched	Check the option code of the indoor unit	Operation Off	Outdoor unit protection control error
601	Communication error between the indoor unit and wired remote controller	Check the connection wire between the indoor unit and the wired remote controller	Normal operation	Wired remote controller error
602	Communication error between the Master and Slave wired remote controllers	Check the option switch for defining the Master and Slave (only one Master and one Slave can exist)	Normal operation	Wired remote controller error

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Wired remote controller (cont.)

Error mode	Contents	Measure	Product operation in error condition	Error type
			Outdoor unit/ Compressor/Indoor unit	
606	COM1/COM2 cross installation error	Check that wired remote controller is connected to the COM2 terminal of the indoor unit	Normal operation	Wired remote controller error
607	Communication error between the Master and Salve wired remote controllers	Check the option switch for defining the Master and salve(Only one Master can exist)	Normal operation	Wired remote controller error
EA	Wired remote controller COM2 option setting error	Check that Com1, Com2 setting DIP switch is set to Com2	Normal operation	Wired remote controller error

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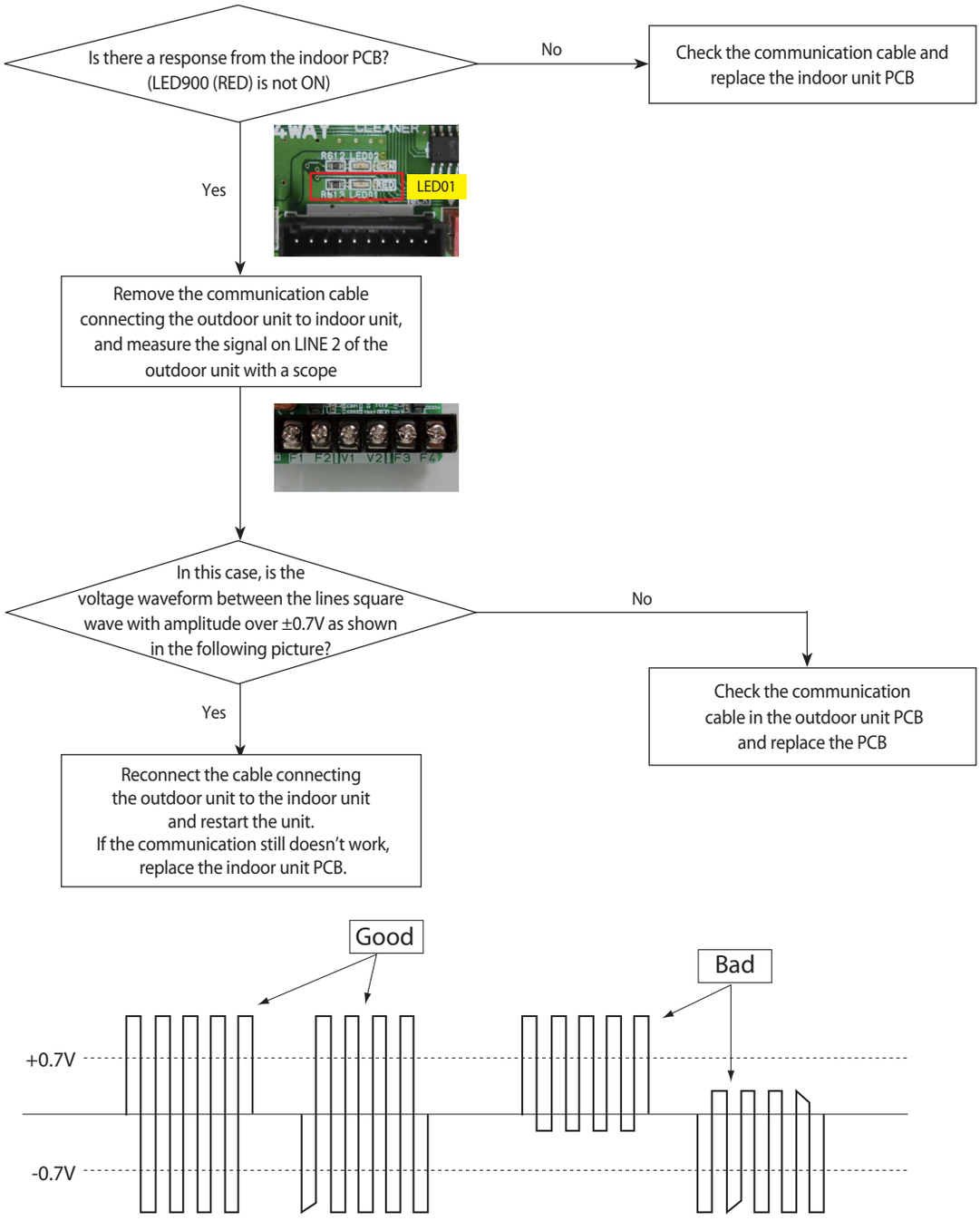
4-2 Troubleshooting by symptoms

4-2-1 Communication error after finishing Tracking

Indoor unit display	E604
Symptom	Communication error between the indoor and outdoor unit for two minutes
Failure	Communication error between the indoor unit and outdoor unit


Is there a response from the indoor PCB?
(LED900 (RED) is not ON)
No
Check the communication cable and replace the indoor unit PCB
Yes
LED01
Remove the communication cable connecting the outdoor unit to indoor unit, and measure the signal on LINE 2 of the outdoor unit with a scope
In this case, is the voltage waveform between the lines square wave with amplitude over ±0.7V as shown in the following picture?
No
Check the communication cable in the outdoor unit PCB and replace the PCB
Yes
Reconnect the cable connecting the outdoor unit to the indoor unit and restart the unit.
If the communication still doesn't work, replace the indoor unit PCB.
Good
Bad
+0.7V
-0.7V

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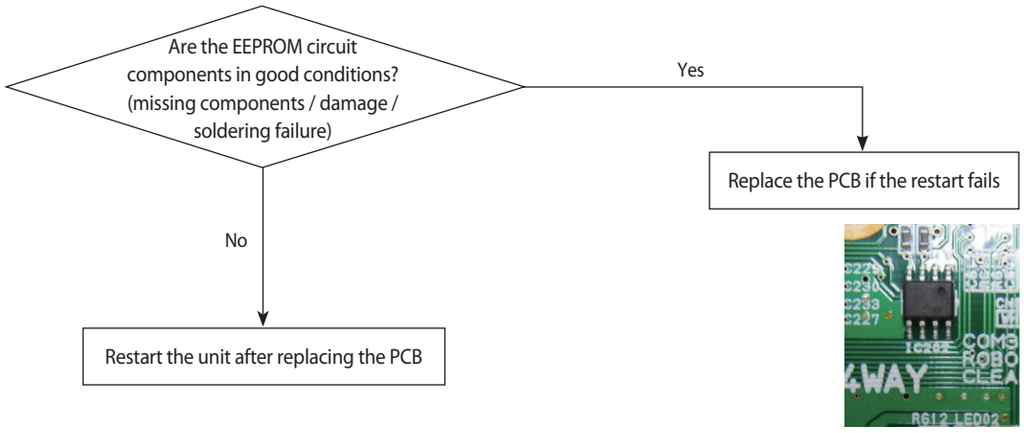
4-2-2 EEPROM circuit failure

Indoor unit display	E 162
Symptom	EEPROM circuit failure
Failure	EEPROM component failure, EEPROM circuit parts missing/damaged/soldering failure


Are the EEPROM circuit components in good conditions? (missing components / damage / soldering failure)
Yes
No
Replace the PCB if the restart fails
Restart the unit after replacing the PCB
4WAY

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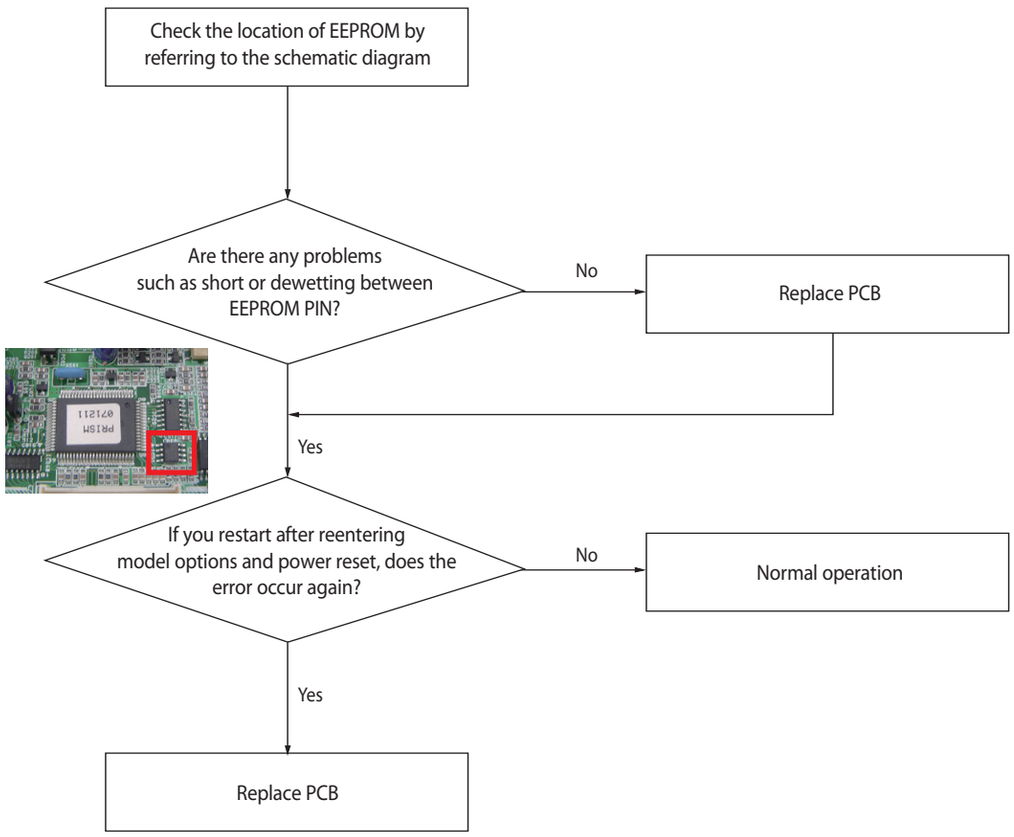
4-3 Control Kit(Mono)

4-3-1 EEPROM error

Outdoor unit display	E 162
Indoor unit display	×(Operation) ◑(Timer) ◑(Fan) ◑(Filter) ×(Defrost)
Criteria	• Communication failure between EEPROM and MICOM
Cause of problem	• PCB replacement due to defective EEPROM

1. How to check


Check the location of EEPROM by referring to the schematic diagram
Are there any problems such as short or dewetting between EEPROM PIN?
No
Replace PCB
Yes
If you restart after reentering model options and power reset, does the error occur again?
No
Normal operation
Yes
Replace PCB

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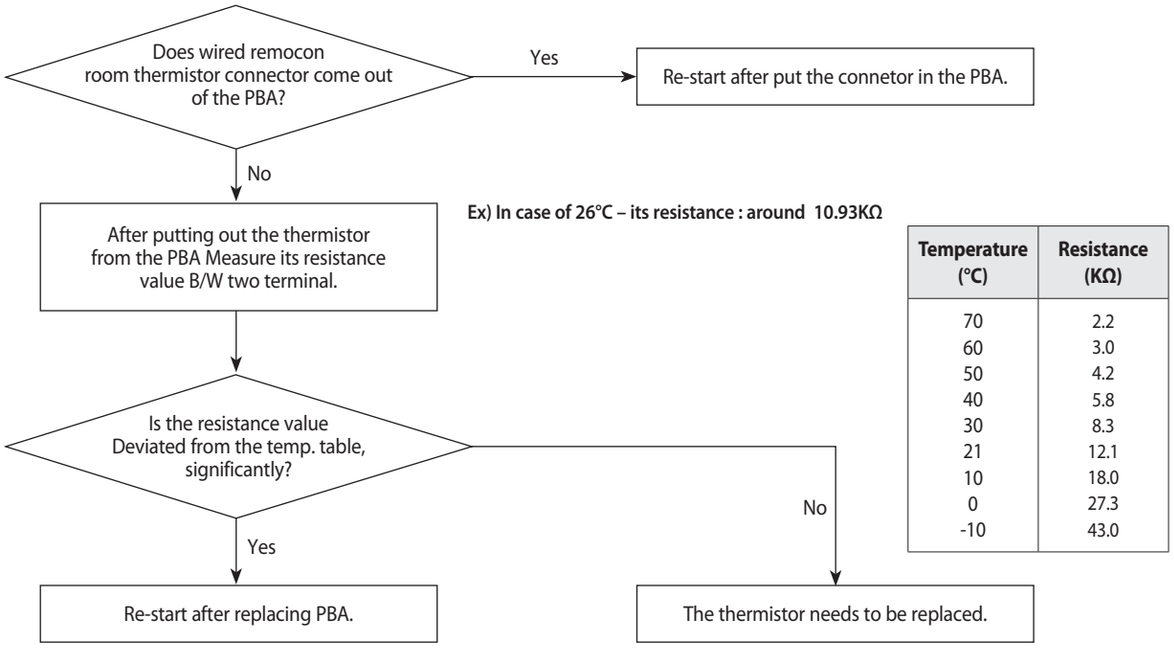
4-3-2 E653 : Error due to abnormal data of Wired remote controller thermistor value

Outdoor unit display	E653 ↔ A xxx(x x x : The address of the error occurred indoor unit)
Wired remocon display	E653
Criteria	• Refer to how to determine below
Cause of problem	• Wired remocon room thermistor has a defective OPEN/SHORT

1. How to check


Does wired remocon room thermistor connector come out of the PBA?
Yes
Re-start after put the connetor in the PBA.
No
After putting out the thermistor from the PBA Measure its resistance value B/W two terminal.
Is the resistance value Deviated from the temp. table, significantly?
No
Yes
Re-start after replacing PBA.
The thermistor needs to be replaced.

Ex) In case of 26°C – its resistance : around 10.93KΩ

Temperature (°C)	Resistance (KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
21	12.1
10	18.0
0	27.3
-10	43.0

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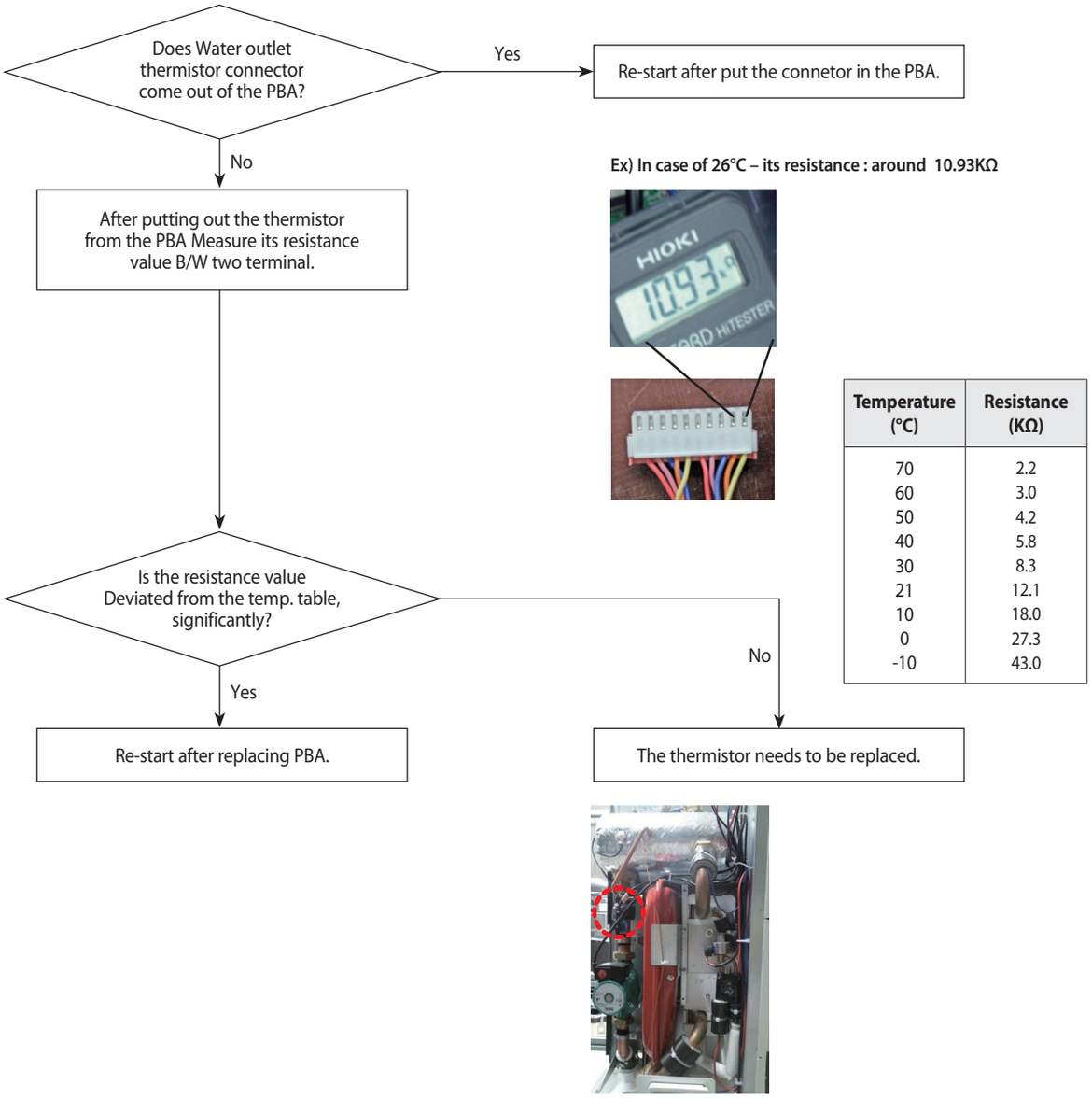
4-3-3 E903 : Error due to abnormal data of Water outlet thermistor value

Outdoor unit display	E903 ↔ A xxx(x x x : The address of the error occurred indoor unit)
Wired remocon display	E903
Criteria	• Refer to how to determine below
Cause of problem	• Water outlet thermistor has a defective OPEN/SHORT

1. How to check


Does Water outlet thermistor connector come out of the PBA?
Yes
Re-start after put the connetor in the PBA.
No
After putting out the thermistor from the PBA Measure its resistance value B/W two terminal.
Is the resistance value Deviated from the temp. table, significantly?
Yes
No
Re-start after replacing PBA.
The thermistor needs to be replaced.

Ex) In case of 26°C – its resistance : around 10.93KΩ

Temperature (°C)	Resistance (KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
21	12.1
10	18.0
0	27.3
-10	43.0

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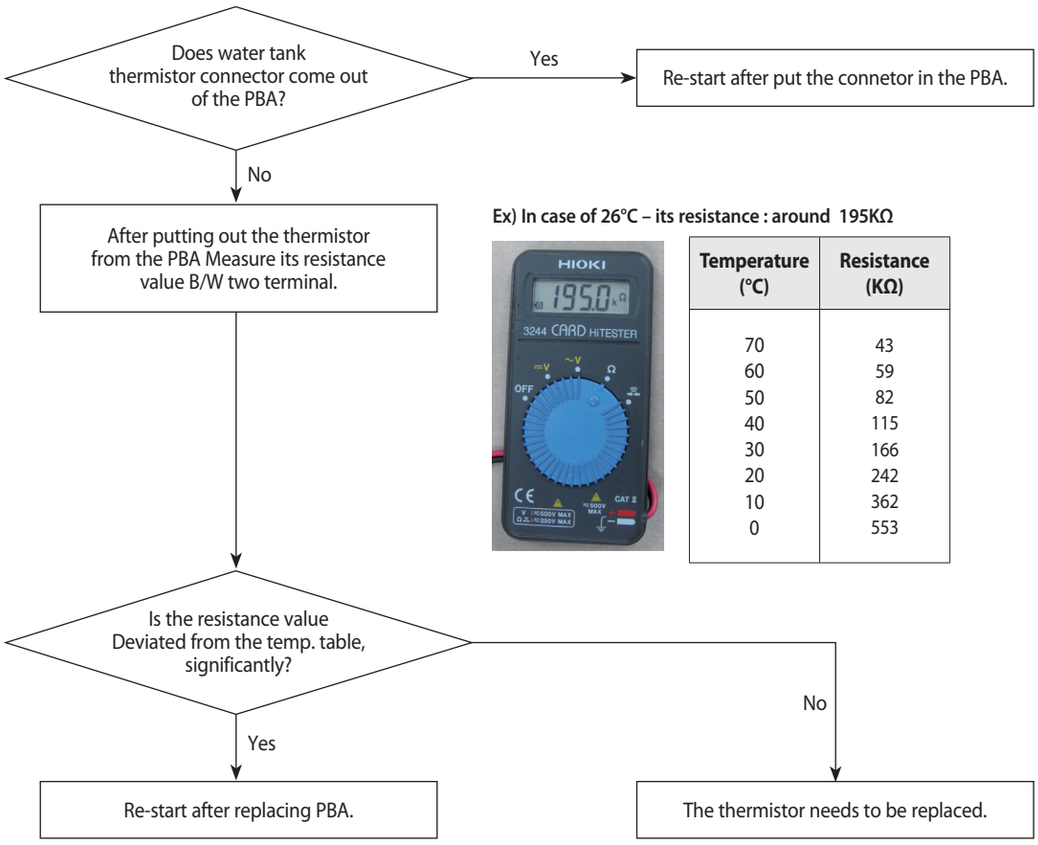
4-3-4 E904 : Error due to abnormal data of DHW tank thermistor value

Outdoor unit display	E904 ↔ A x x x (x x x : The address of the error occurred indoor unit)
Wired remocon display	E904
Criteria	• Refer to how to determine below
Cause of problem	• DHW tank thermistor has a defective OPEN/SHORT

1. How to check


Does water tank thermistor connector come out of the PBA?
Yes
Re-start after put the connetor in the PBA.
No
After putting out the thermistor from the PBA Measure its resistance value B/W two terminal.
Is the resistance value Deviated from the temp. table, significantly?
Yes
No
Re-start after replacing PBA.
The thermistor needs to be replaced.

Ex) In case of 26°C – its resistance : around 195KΩ

Temperature (°C)	Resistance (KΩ)
70	43
60	59
50	82
40	115
30	166
20	242
10	362
0	553

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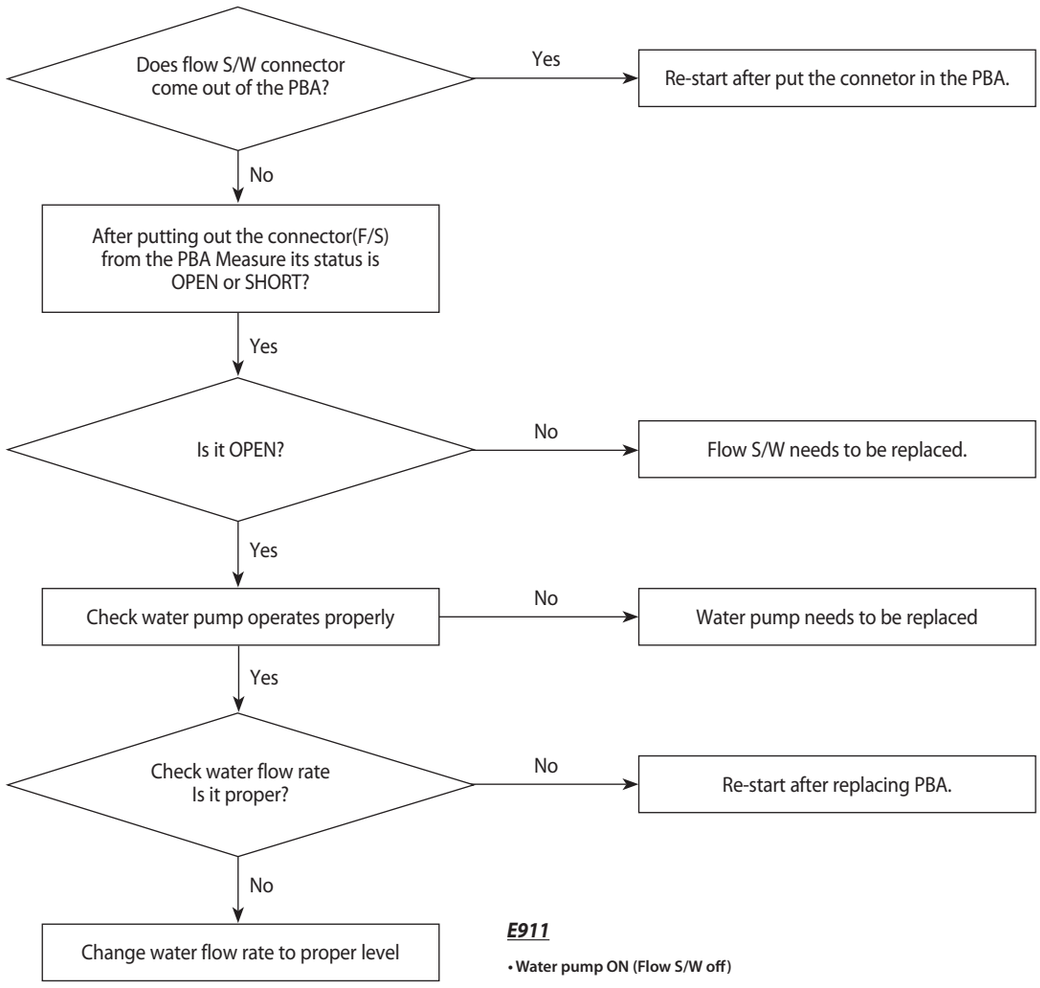
4-3-5 Water pump & flow switch OFF

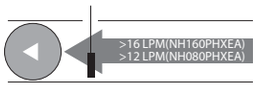
Wired remocon display	E911
Criteria	• Refer to how to determine below
Cause of problem	• Flow switch signal is off during 10seconds when the water pump signal is ON

1. How to check

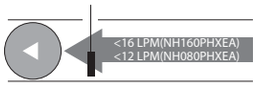

Does flow S/W connector come out of the PBA?
Yes
Re-start after put the connetor in the PBA.
No
After putting out the connector(F/S) from the PBA Measure its status is OPEN or SHORT?
Yes
Is it OPEN?
No
Flow S/W needs to be replaced.
Yes
Check water pump operates properly
No
Water pump needs to be replaced
Yes
Check water flow rate Is it proper?
No
Re-start after replacing PBA.
No
Change water flow rate to proper level

E911

• Water pump ON (Flow S/W off)



• Water pump ON (Flow S/W off) : NOT enough water flow



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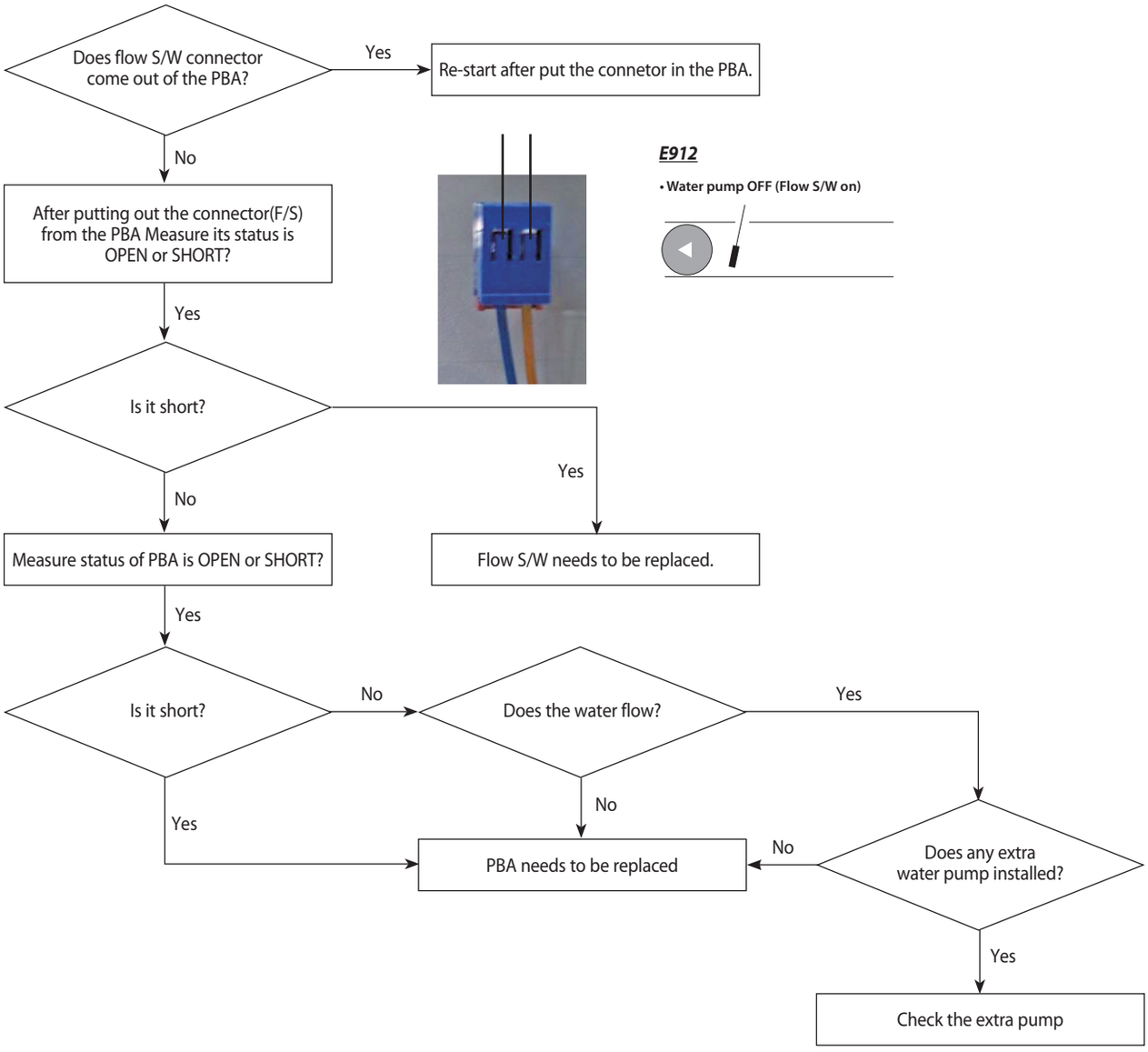
4-3-6 Water pump & flow switch ON

Wired remocon display	E912
Criteria	• Refer to how to determine below
Cause of problem	• Flow switch signal is on during 10seconds when the water pump signal is off)

1. How to check



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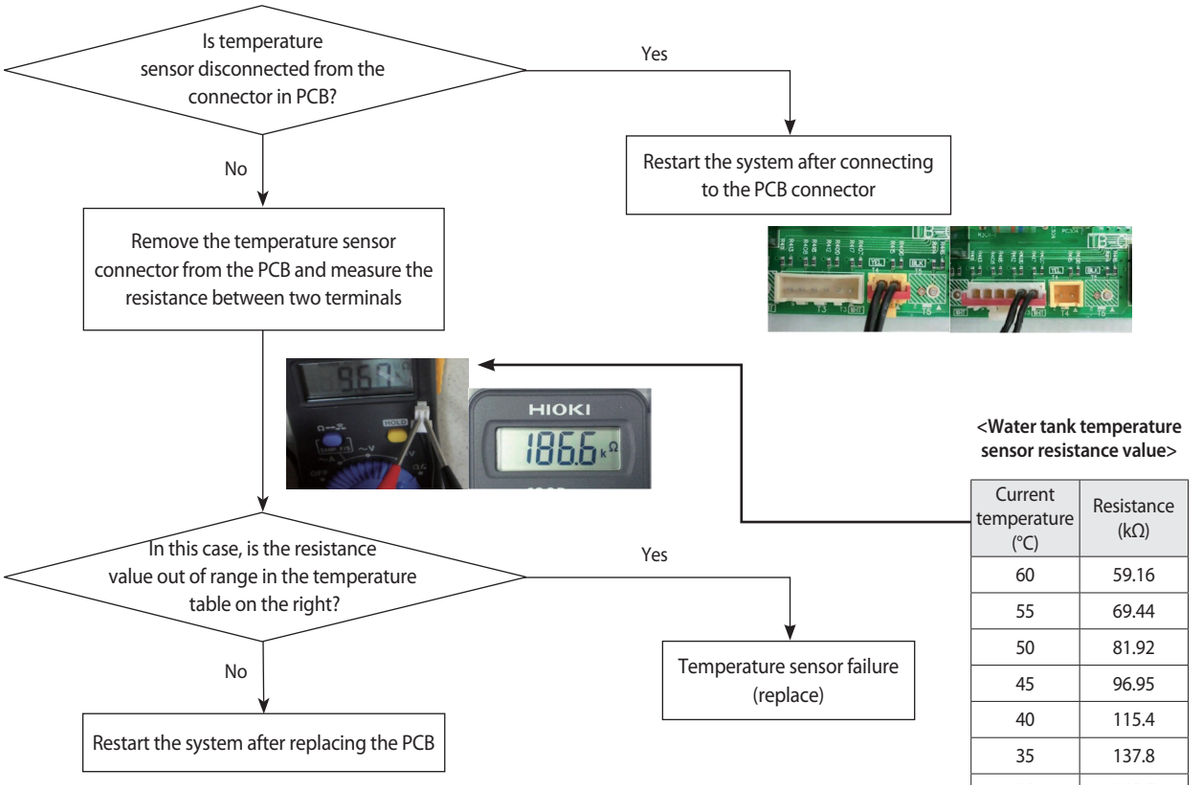
4-3-7 Control KIT temperature sensor(open/short)

Error Mode	E901, E902, E903, E904, E906
Symptom	In case of open or short circuit of indoor temperature sensor
Failure	Short or leakage of the corresponding sensor


Is temperature sensor disconnected from the connector in PCB?
Yes
No
Restart the system after connecting to the PCB connector
Remove the temperature sensor connector from the PCB and measure the resistance between two terminals
HIOKI
186.6
In this case, is the resistance value out of range in the temperature table on the right?
Yes
No
Temperature sensor failure (replace)
Restart the system after replacing the PCB

<Water tank temperature sensor resistance value>

Current temperature (°C)	Resistance (kΩ)
60	59.16
55	69.44
50	81.92
45	96.95
40	115.4
35	137.8
30	165.7
25	200
20	242.5
15	295.4
10	362.4

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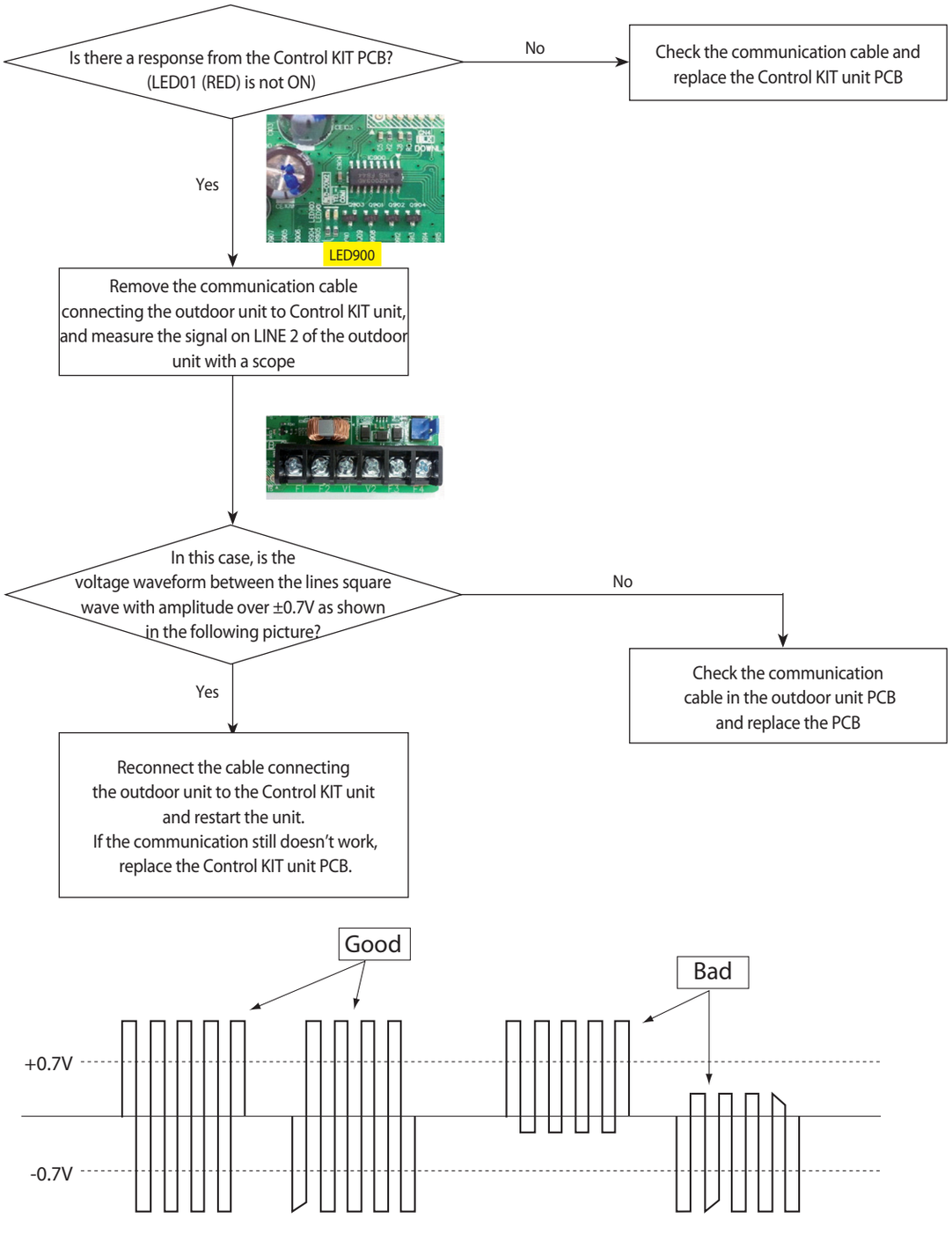
4-3-8 Communication error after finishing Tracking(Control KIT)

Error Mode	E201, E202
Symptom	Communication error between the Control KIT and outdoor unit for two minutes
Failure	Communication error between the Control KIT unit and outdoor unit


Is there a response from the Control KIT PCB?
(LED01 (RED) is not ON)
No
Check the communication cable and replace the Control KIT unit PCB
Yes
LED900
Remove the communication cable connecting the outdoor unit to Control KIT unit, and measure the signal on LINE 2 of the outdoor unit with a scope
In this case, is the voltage waveform between the lines square wave with amplitude over ±0.7V as shown in the following picture?
No
Check the communication cable in the outdoor unit PCB and replace the PCB
Yes
Reconnect the cable connecting the outdoor unit to the Control KIT unit and restart the unit.
If the communication still doesn't work, replace the Control KIT unit PCB.
Good
Bad
+0.7V
-0.7V

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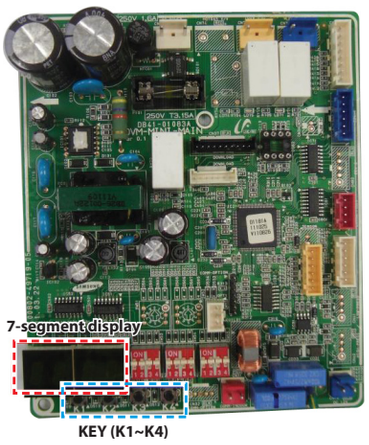
4-4 Items to check before diagnostics

4-4-1 Test run mode and view mode

■ Display Option Key

KEY	KEY operation	7-segment display
K1	Press once : Heating test run	"H" "1" "BLANK" "BLANK"
	Press twice : Defrost test run	"H" "3" "BLANK" "BLANK"
	Press 3times : Finishing test mode	-
K2	Press once : Cooling test run	"H" "2" "BLANK" "BLANK"
	Press twice : Finishing test mode	-
K3	Reset	
K4	View mode	Refer to View mode display



■ VIEW mode display

Number of press	Display contents	Display				Units
		Segment 1	Segment 2	Segment 3	Segment 4	
0	Communication State	Two digits of Tx	One digit of Tx	Two digits of Rx	One digit of Rx	
1	Order frequency	1	Three digits	Two digits	One digit	Hz
2	Current frequency	2	Three digits	Two digits	One digit	Hz
3	Type of Outdoor unit(Mone/Split)					
4	Out sensor	4	Two digits	One digit	First decimal	°C
5	Discharge sensor	5	Two digits	One digit	First decimal	°C
6	OLP sensor	6	Two digits	One digit	First decimal	°C
7	Cond sensor	7	Two digits	One digit	First decimal	°C
8	Current	8	Two digits	One digit	First decimal	°C
9	Fan RPM	9	Three digits	Two digits	One digit	rpm
10	Target discharge temperature	A	Three digits	Two digits	One digit	°C
11	EEV	B	Three digits	Two digits	One digit	step
12	Total indoor heat exchanger capacity	C	Two digits	One digit	First decimal	kW
13	Protection control	D	0 : air conditioning 1 : heating	**Protection control** 0 : no protection control 1 : freezing 2 : non-stop defrosting 3 : over-load 4 : discharge	**Frequency state** 0 : Normal 1 : Hold 2 : Down 3 : Up_limit 4 : Sown_limit	-
14	Temperature of Heatsink at PBA	E	Two digits	One digits	First decimal	°C
15	The Quantity of connected Indoor Unit	F	Three digits	Two digits	One digit	set
long-1	Main Micom version	Year(Hex)	Month(Hex)	Day(two digit)	Day(One digit)	-
long-1 and 1	Inverter Micom version	Year(Hex)	Month(Hex)	Day(two digit)	Day(One digit)	-
long-1 and 2	EEPROM version	Year(Hex)	Month(Hex)	Day(two digit)	Day(One digit)	-

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4-4-2 Troubleshooting for outdoor unit

If an error occurs during the operation, it is displayed on the outdoor unit PCB LED, both MAIN PCB and INVERTER PCB.

No.	LED Display			Displayed PCB Assy	Meaning	Remarks	Error Code
	Red	Green	Yellow				
-	●	◉	○	MAIN/INVERTER	Normal operation (MAIN : Indoor↔Outdoor : Green ON) (INVERTER : MAIN PCB↔INVERTER PCB : Green ON)		-
1	●	◉	○	MAIN	Control Kit quantity is mismatched.	Check Control Kit quantity setting in outdoor	E201
2	●	●	○	MAIN/INVERTER	Abnormal state, no communication between Indoor and Outdoor Main PCB	Check electrical connection and setting	E202
	🗑	○	○				
4	●	●	◉	MAIN/INVERTER	1min. Time out of communcation error(Main↔Inverter)	Check electrical connection and setting	E203
5	●	◉	○	MAIN	Outdoor temp sensor error	Check Outdoor sensor Open/Short	E221
6	●	◉	○	MAIN	Cond. temp sensor error	Check Cond. sensor Open/Short	E231
7	●	◉	○	MAIN	Discharge temp sensor error	Check Discharge sensor Open/Short	E251
8	●	◉	○	MAIN	OLP Sensor Error	Check OLP sensor Open/Short	E320
9	●	◉	○	MAIN	Detection of Outdoor Freezing when Comp. Stop	Check Outdoor Cond.	E403
10	●	◉	○	MAIN	Protection of Outdoor Overload when Comp. Stop	Check Comp. when it start	E404
11	●	◉	○	MAIN	Discharge temperature of a compressor in an outdoor unit is overheated.		E416
12	●	◉	○	MAIN	Outdoor EEV Open error	Check EEV	E419
13	●	◉	○	MAIN	Miss wiring error at 3Phase power source line (Only 3Phase Model)	Check Power Line-R,S,T,N	E425
14	●	◉	○	MAIN	Gas leakage error (Stop state)	Check Gas leak	E439
15	●	◉	○	MAIN	Heating operation is not available since the outdoor air temperature is over 35℃.	Heating	E440
					16	Cooling	E441
16	●	◉	○	MAIN	Gas leakage error (Before operating)	Check Gas leak	E443
17	○	○	●	MAIN/INVERTER	Outdoor unit BLDC Fan 1 or Fan 2 error	FAN1 error	E458
						19	E475
18	○	◉	○	MAIN/INVERTER	Comp. Starting error		E461
19	●	◉	○	MAIN	Primary Current Trip error		E462
20	●	◉	○	MAIN	Over current trip / PFC over current error	Check OLP sensor	E463
21	◉	○	○	MAIN/INVERTER	IPM(IGBT Module) Over Current(O.C)		E464
22	○	●	◉	MAIN/INVERTER	Comp. Over load error		E465
23	◉	●	○	MAIN/INVERTER	DC-Link voltage under/over error	Check AC Power or DC_Link voltage	E466

○ Off ◉ Blink ● On

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Troubleshooting for outdoor unit(con.)

If an error occurs during the operation, it is displayed on the outdoor unit PCB LED, both MAIN PCB and INVERTER PCB.

No.	LED Display			Displayed PCB Assy	Meaning	Remarks	Error Code
	Red	Green	Yellow				
24	●	○	●	MAIN/INVERTER	Comp. wire missing error	Check Comp. wire	E467
25	●	◉	◉	MAIN/INVERTER	Current sensor error	Check Outdoor Inverter PBA	E468
26	●	◉	○	MAIN	DC-Ling voltage Sensor error	Check Input voltage	E469
27	●	◉	○	MAIN	EEPROM read/write error	Check EEPROM	E470
28	●	◉	○	MAIN	Outdoor EEPROM error	Check Outdoor EEPROM date	E471
29	◉	◉	○	MAIN/INVERTER	IPM(IGBT Module) or PFCM Temperature sensor Error	Check Outdoor Inverter PBA	E474
30	●	◉	●	MAIN/INVERTER	PFC Overload Error	Check Outdoor Inverter PBA	E484
31	●	◉	○	MAIN	Input current sensor error		E485
32	◉	◉	○	MAIN/INVERTER	IPM is over heated.	Check Outdoor Inverter PBA	E500
33	●	◉	○	MAIN	GAS Leak error	Check indoor and outdoor unit model	E554
34	●	◉	○	MAIN	Water inlet temperature sensor error	Check Water inlet sensor	E901
35	●	◉	○	MAIN	Water outlet temperature sensor error	Check Water outlet sensor	E903
36	●	◉	○	MAIN	Refriqerant gas inlet temperature sensor error	Check Gas inlet sensor	E906

○ Off ◉ Blink ● On

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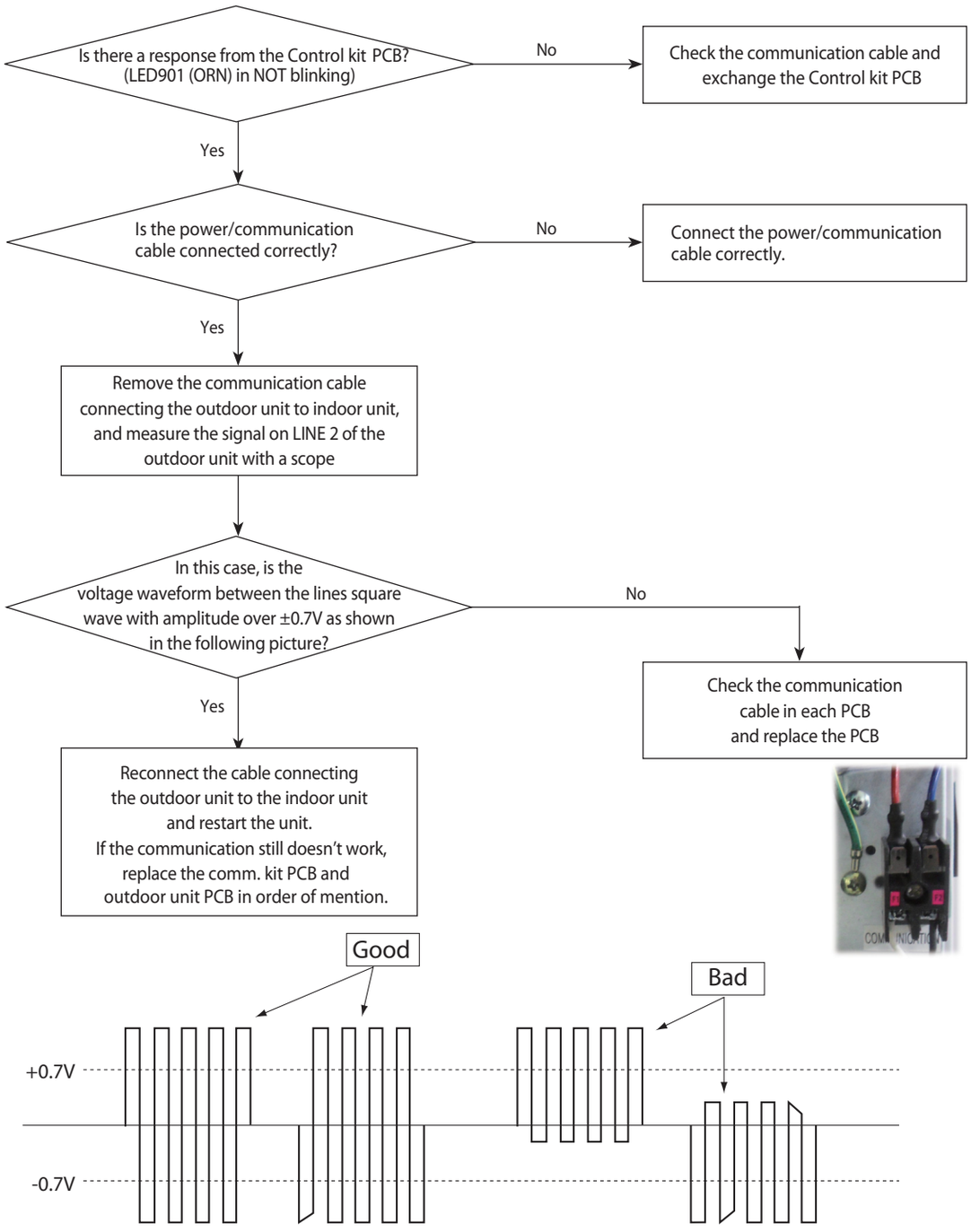
4-5 Troubleshooting by symptoms

4-5-1 Communication error after finishing tracking (E202)

1. Check items
   1) Is the communication cable short/open?
   2) Is there a response from the Control kit PCB?

2. Check procedure


Is there a response from the Control kit PCB? (LED901 (ORN) in NOT blinking)
No
Check the communication cable and exchange the Control kit PCB
Yes
Is the power/communication cable connected correctly?
No
Connect the power/communication cable correctly.
Yes
Remove the communication cable connecting the outdoor unit to indoor unit, and measure the signal on LINE 2 of the outdoor unit with a scope
In this case, is the voltage waveform between the lines square wave with amplitude over ±0.7V as shown in the following picture?
No
Check the communication cable in each PCB and replace the PCB
Yes
Reconnect the cable connecting the outdoor unit to the indoor unit and restart the unit. If the communication still doesn't work, replace the comm. kit PCB and outdoor unit PCB in order of mention.
Good
Bad
+0.7V
-0.7V

cf.) If there is no oscillo scope, it can be replaced multimeter instead of osillo scope.
If measured voltage is floating value from 0.1V to 4.5V, then it means that the PCB is normal.

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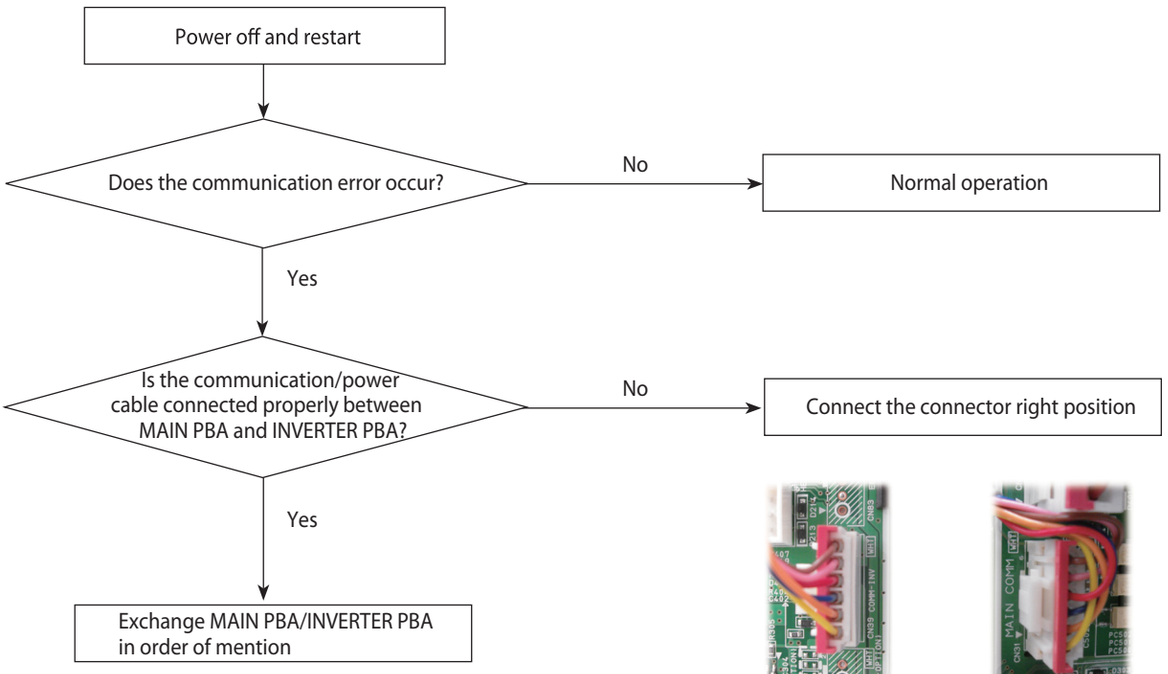
4-5-2 Time out (1min.) of communication error between MAIN PBA and INV. PBA (E203)

1. Check items
   1) Is the communication cable connected properly between MAIN PBA and INVERTER PBA?
   2) Is the power cable connected correctly?

2. Check procedure


Power off and restart
Does the communication error occur?
No
Normal operation
Yes
Is the communication/power cable connected properly between MAIN PBA and INVERTER PBA?
No
Connect the connector right position
Yes
Exchange MAIN PBA/INVERTER PBA in order of mention

<CN39 in MAIN PBA>

<CN31 in INVERTER PBA>

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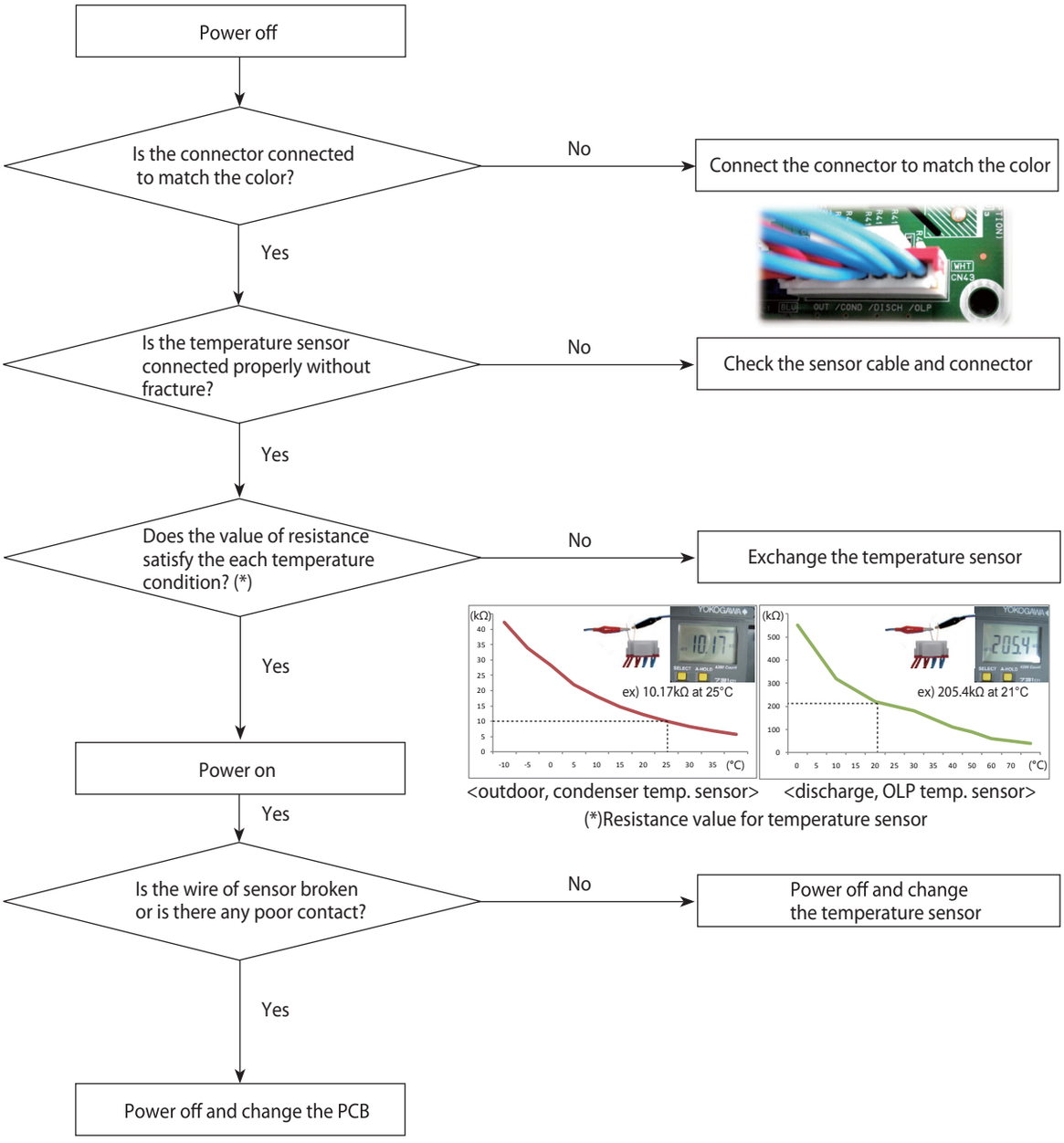
4-5-3 Temperature sensor error (E221, E231, E251, E320)

<Error code for each temperature sensor>

	Pin no.	Temp. sensor	Error code
CN43 in MAIN PBA	1,2	Outdoor	E221
	3,4	Condenser	E231
	5,6	Discharge	E251
	7,8	OLP	E320

1. Check items
   1) Is the sensor connected correctly (CN43 in MAIN PBA)?
   2) Is the postion of sensor correct?
   3) Does the value of resistance satisfy the each temperature condition?

2. Check procedure



<outdoor, condenser temp. sensor> <discharge, OLP temp. sensor>

(*)Resistance value for temperature sensor

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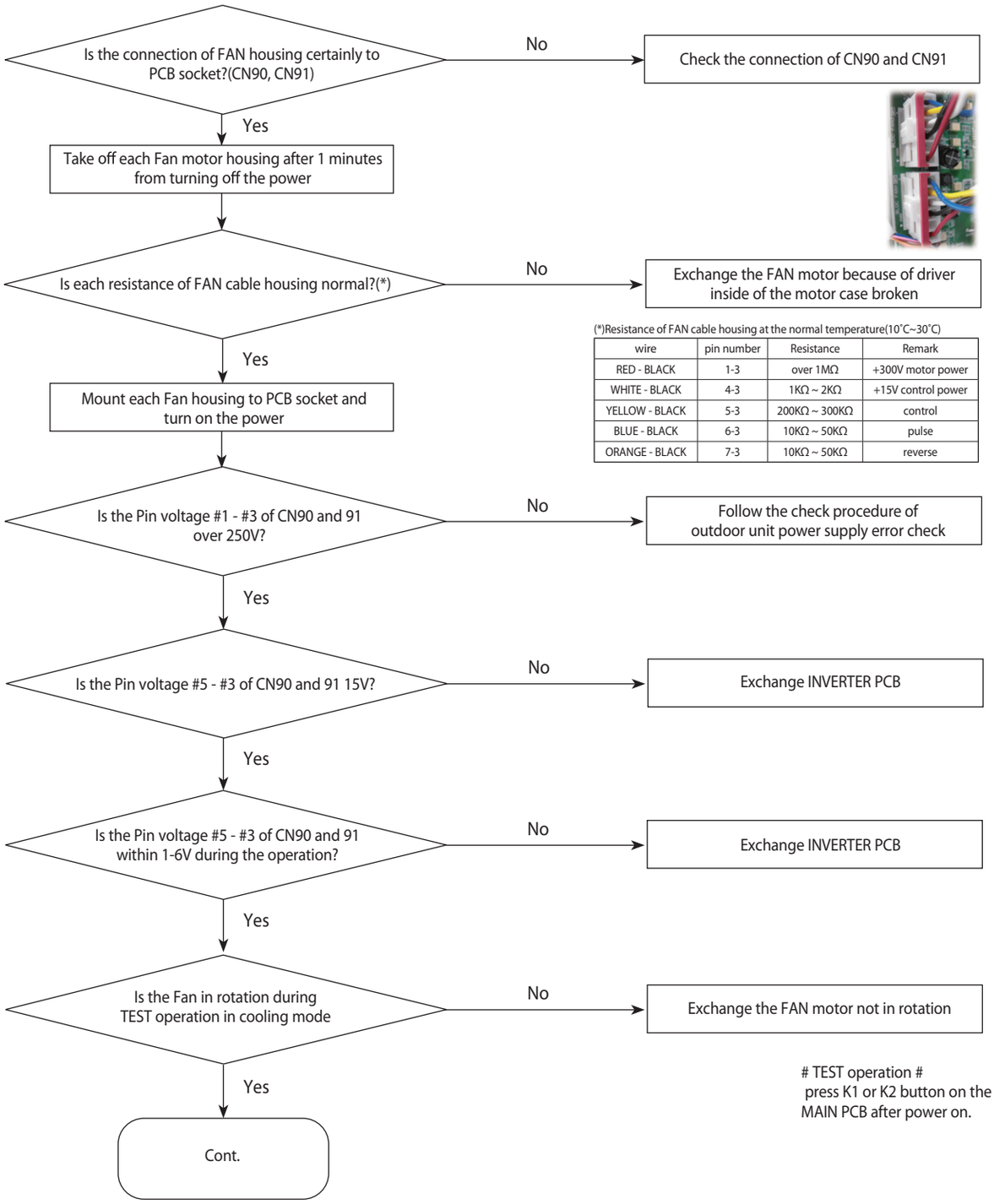
4-5-4 Fan error (E458, E475)

FAN 1 error(E458), FAN 2 error(E475)

1. Check items
   1) Are the input power voltage and power connection correct?
   2) Is the motor wire connected to the outdoor PCB correctly?
   3) Is there no obstacle at the surrounding of motor and propeller?
   4) Does the driver in the motor case broken?

2. Check procedure


Is the connection of FAN housing certainly to PCB socket?(CN90, CN91)
No
Check the connection of CN90 and CN91
Yes
Take off each Fan motor housing after 1 minutes from turning off the power
Is each resistance of FAN cable housing normal?(*)
No
Exchange the FAN motor because of driver inside of the motor case broken
Yes
Mount each Fan housing to PCB socket and turn on the power
Is the Pin voltage #1 - #3 of CN90 and 91 over 250V?
No
Follow the check procedure of outdoor unit power supply error check
Yes
Is the Pin voltage #5 - #3 of CN90 and 91 15V?
No
Exchange INVERTER PCB
Yes
Is the Pin voltage #5 - #3 of CN90 and 91 within 1-6V during the operation?
No
Exchange INVERTER PCB
Yes
Is the Fan in rotation during TEST operation in cooling mode
No
Exchange the FAN motor not in rotation
Yes
Cont.

(*)Resistance of FAN cable housing at the normal temperature(10°C~30°C)

wire	pin number	Resistance	Remark
RED - BLACK	1-3	over 1MΩ	+300V motor power
WHITE - BLACK	4-3	1KΩ ~ 2KΩ	+15V control power
YELLOW - BLACK	5-3	200KΩ ~ 300KΩ	control
BLUE - BLACK	6-3	10KΩ ~ 50KΩ	pulse
ORANGE - BLACK	7-3	10KΩ ~ 50KΩ	reverse

TEST operation
press K1 or K2 button on the MAIN PCB after power on.

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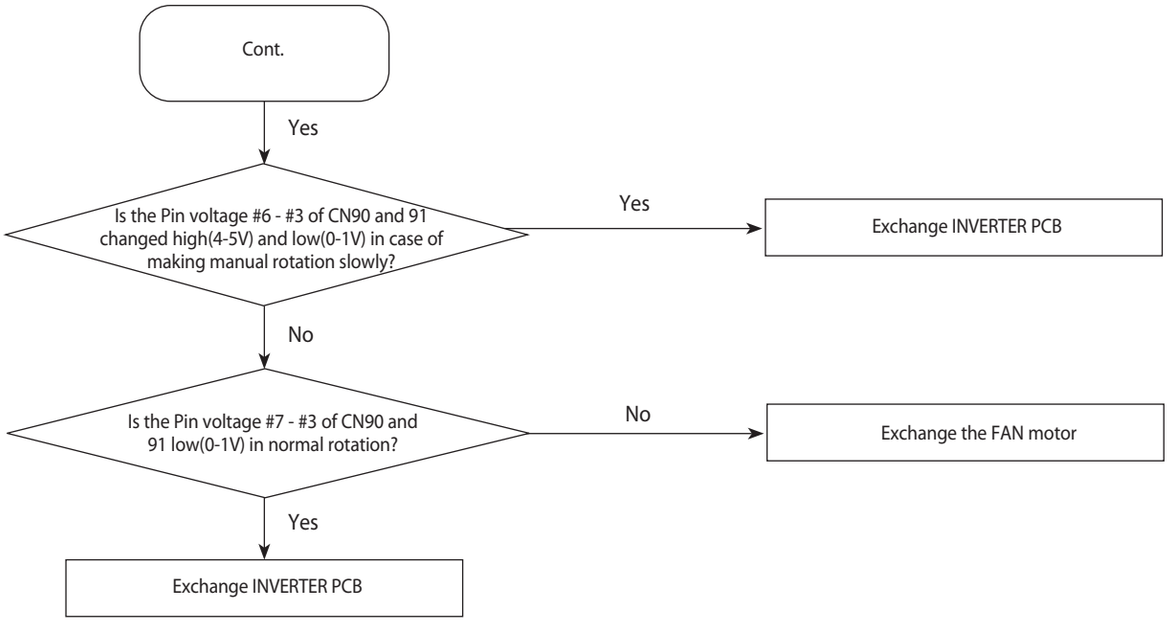
Fan error (E458, E475) (cont.)


Cont.
Yes
Is the Pin voltage #6 - #3 of CN90 and 91 changed high(4-5V) and low(0-1V) in case of making manual rotation slowly?
Yes
Exchange INVERTER PCB
No
Is the Pin voltage #7 - #3 of CN90 and 91 low(0-1V) in normal rotation?
No
Exchange the FAN motor
Yes
Exchange INVERTER PCB

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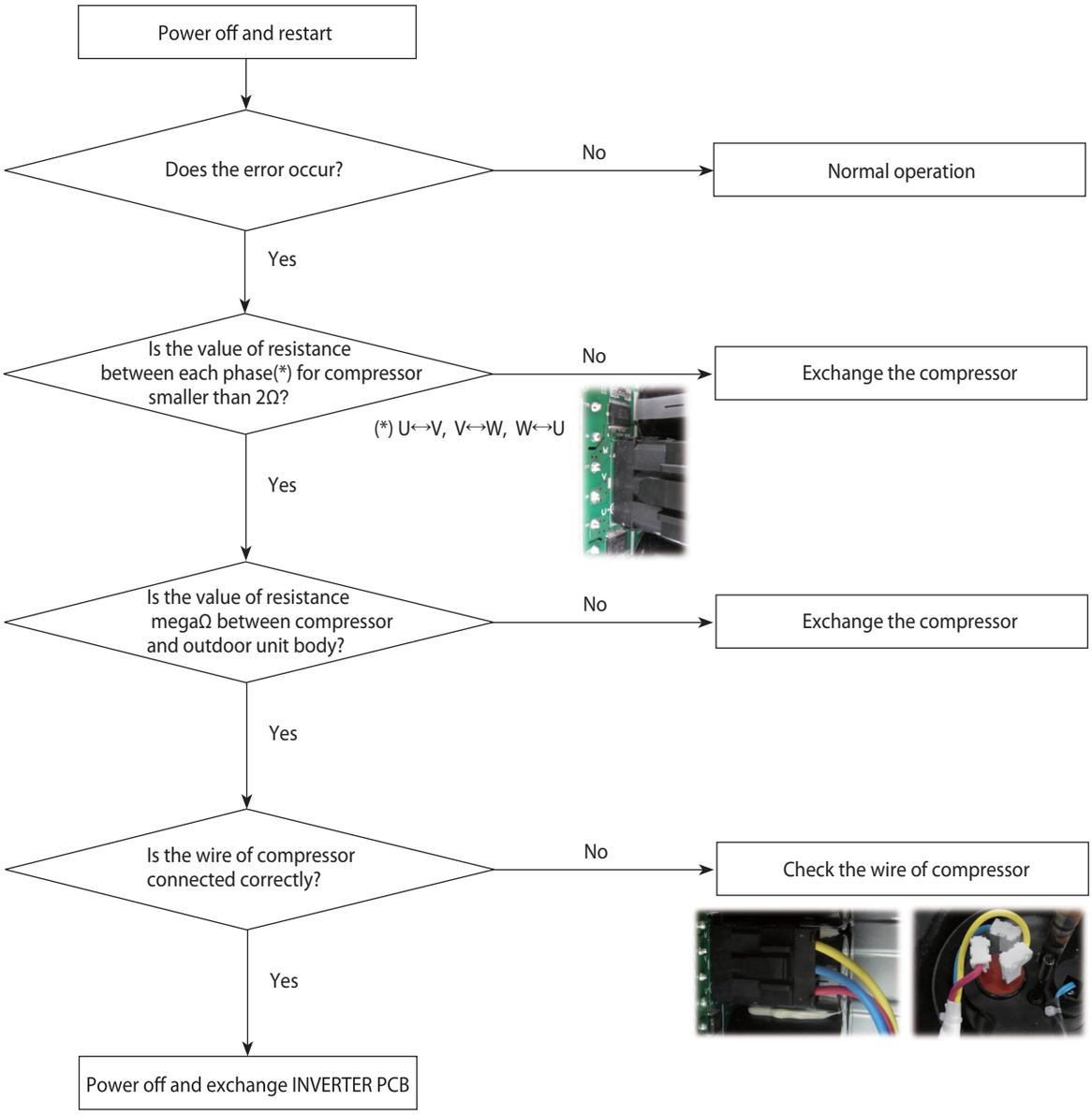
4-5-5 Compressor error (E461, E467)

Compressor starting error(E461), Compressor wire missing error(E467)

1. Check items
   1) Is the power connected properly?
   2) Is the connector of compressor connected correctly?
   3) Is the resistance normal between each phase for compressor ?

2. Check procedure



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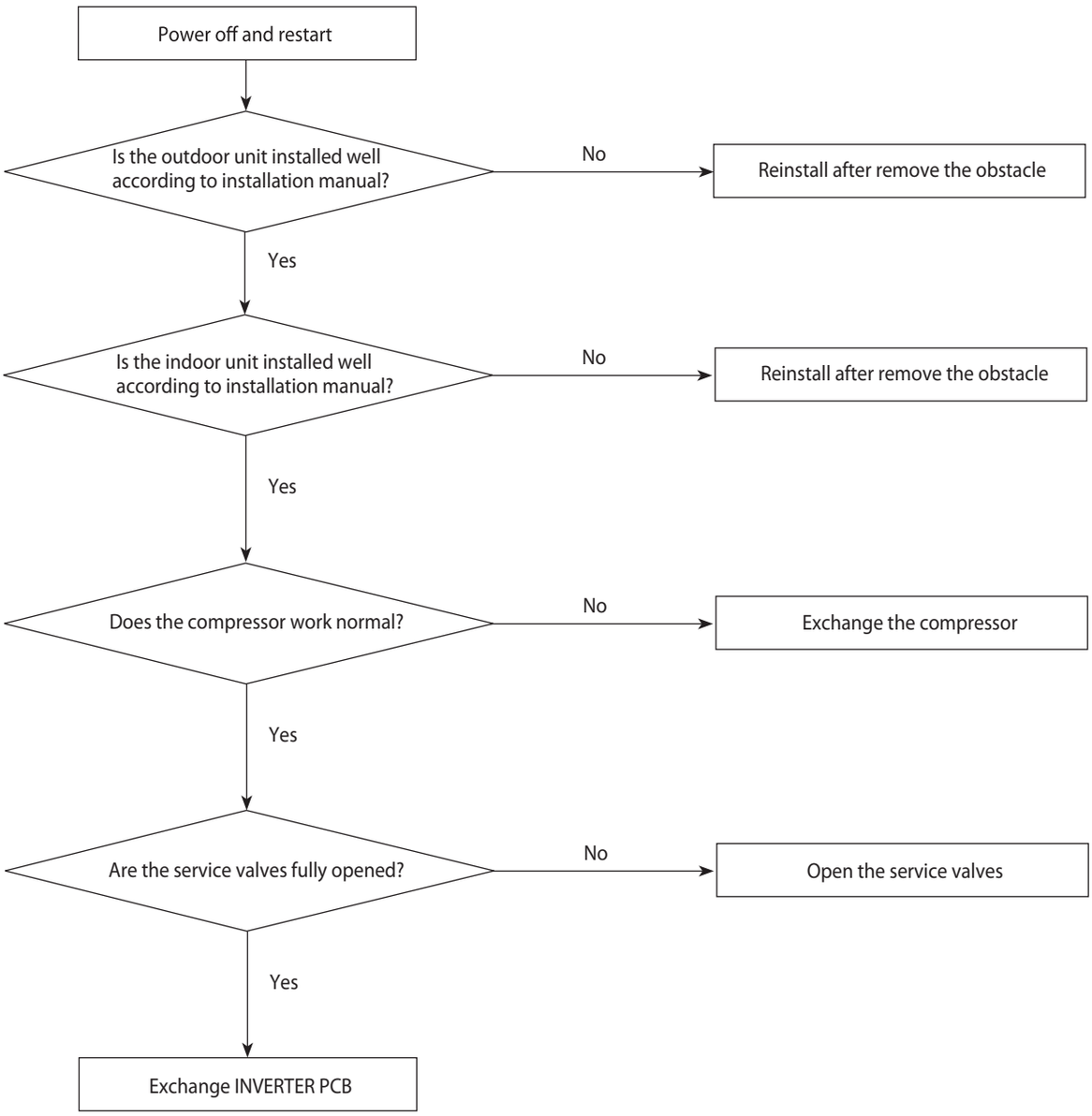
4-5-6 Current trip error (E462, E463)

Primary current trip error(E462), Over current trip / PFC over current error(E463)

1. Check items
   1) Is the voltage of power suitable?
   2) Is refrigerant charged?
   3) Does the fan of outdoor unit work normally?
   4) Is there any obstacle around indoor and outdoor unit?

2. Check procedure



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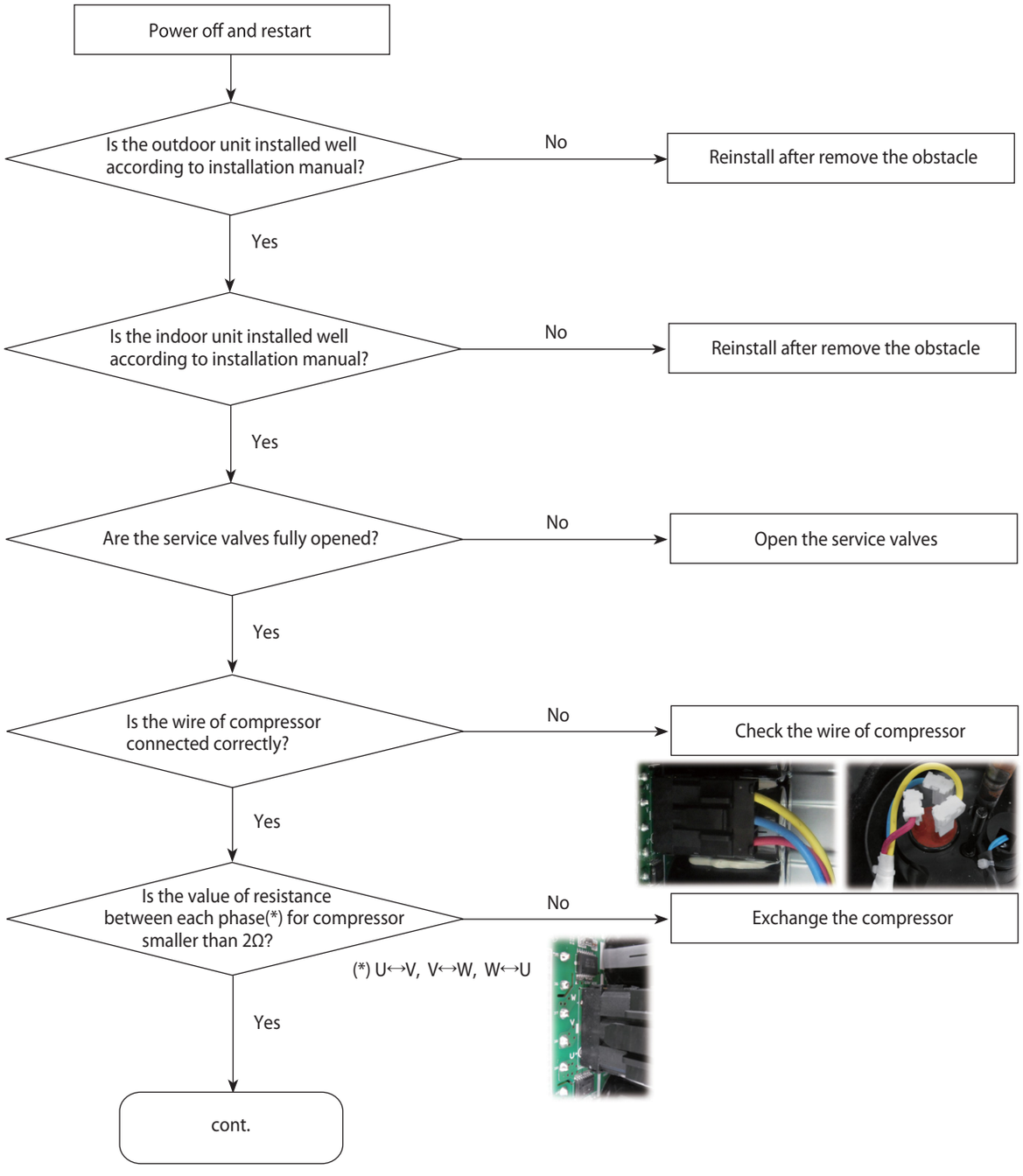
4-5-7 IPM(IGBT module) over current error (E464)

1. Check items
   1) Is refrigerant charged?
   2) Does the compressor work normally?
   3) Is the connection of compressor correctly?
   4) Is there any obstacle around indoor and outdoor unit?

2. Check procedure



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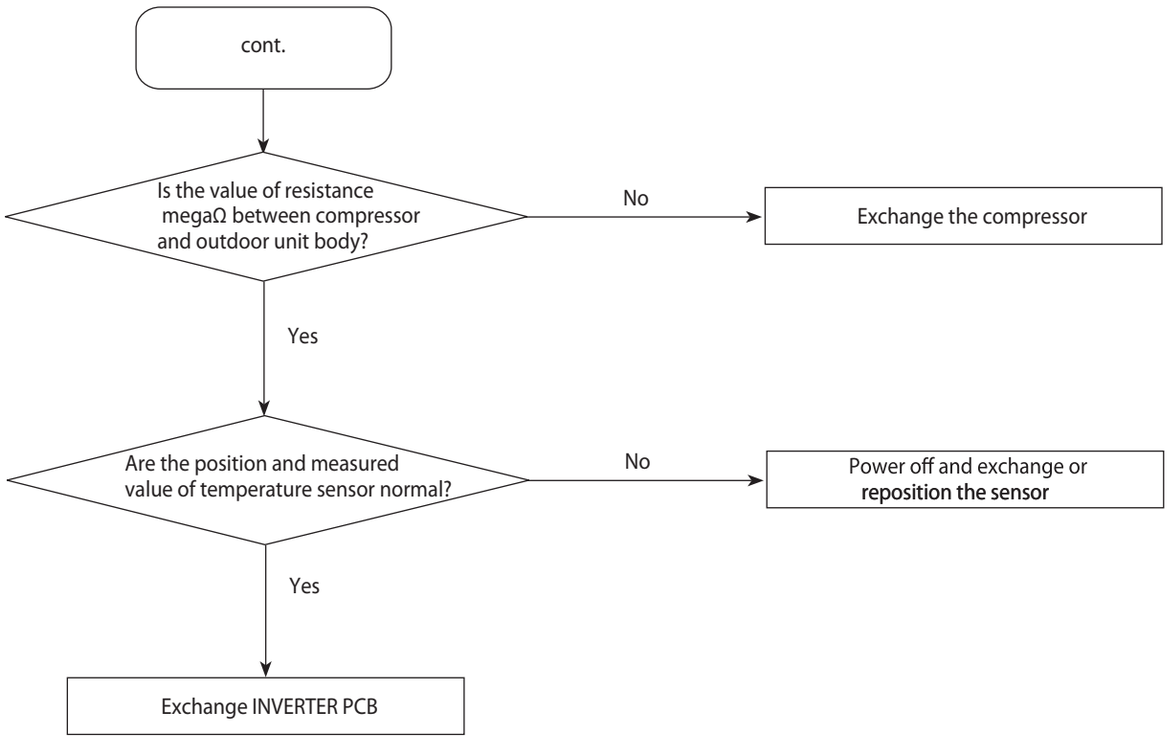
cont.
Is the value of resistance megaΩ between compressor and outdoor unit body?
No
Exchange the compressor
Yes
Are the position and measured value of temperature sensor normal?
No
Power off and exchange or reposition the sensor
Yes
Exchange INVERTER PCB

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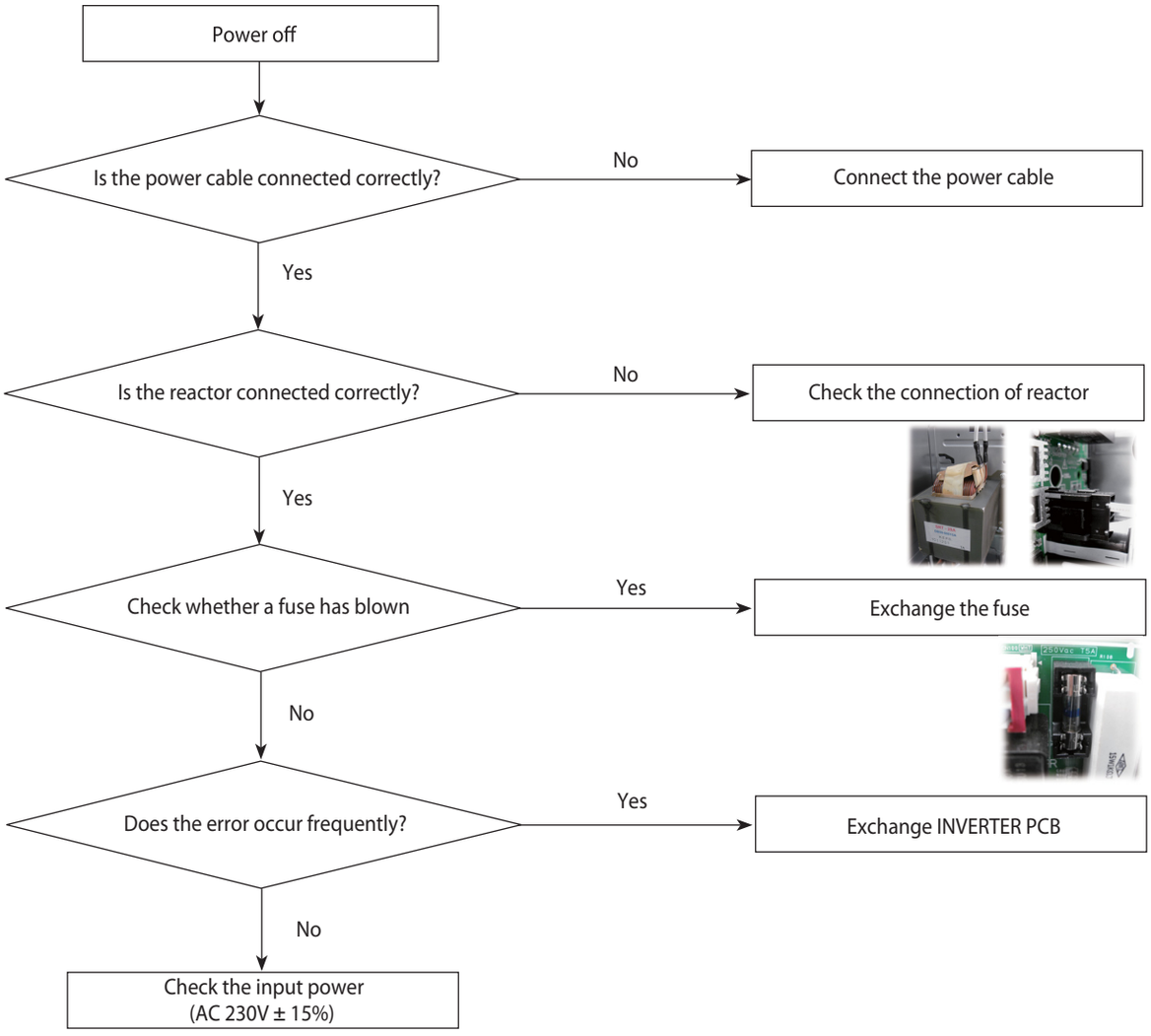
4-5-8 DC-link voltage under/over error (E466)

1. Check items
   1) Is the input power normal?
   2) Is the AC power connected correctly?

2. Check procedure



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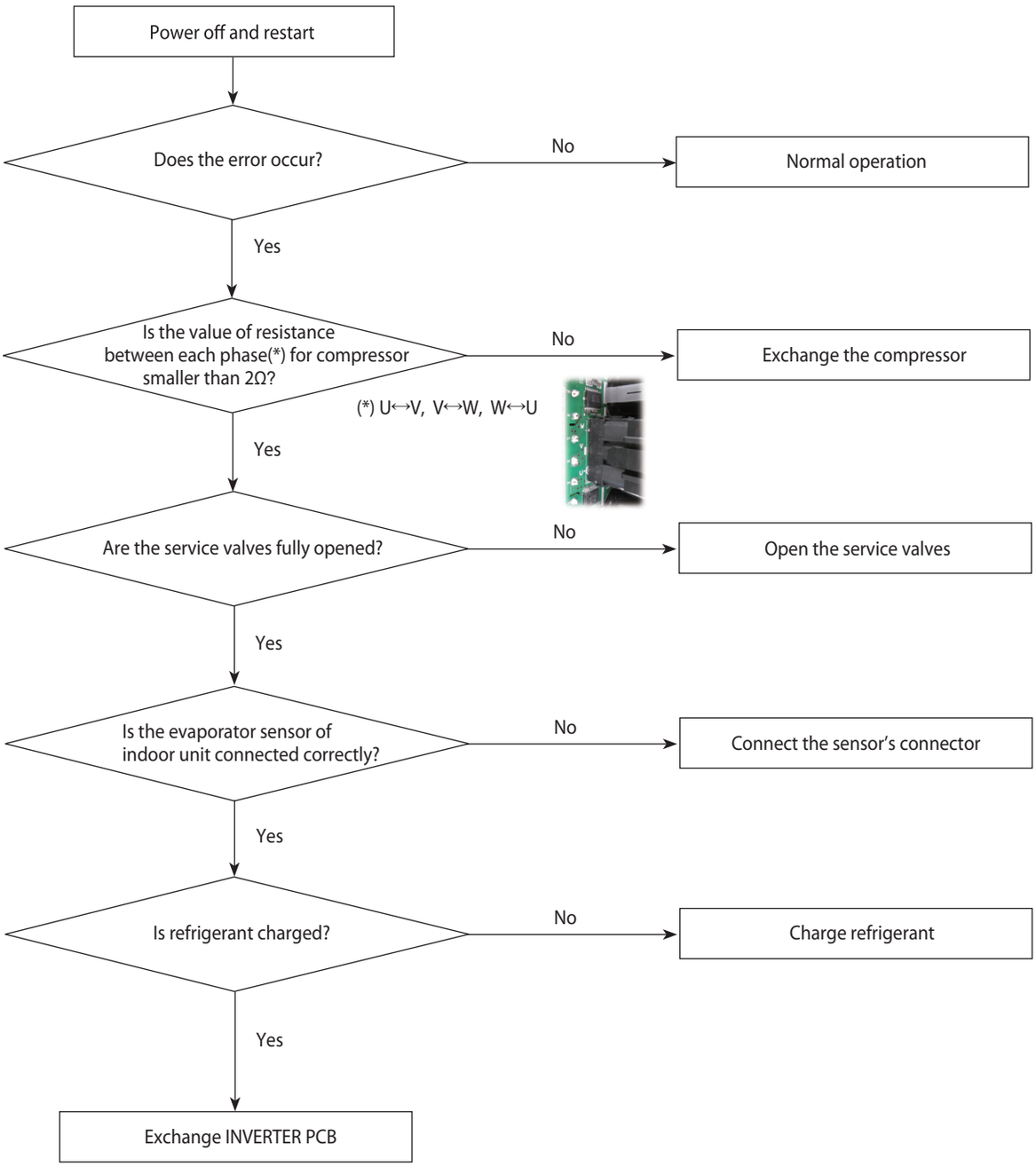
4-5-9 GAS leak error(E554)

1. Check items
   1) Is refrigerant charged?
   2) Is the evaporator sensor of indoor unit connected correctly?

2. Check procedure



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4-5-10 The other errors

Error code	Meaning	Troubleshooting
E177	Emergency stop	Indoor unit (Control kit) orders emergency stop. Check the indoor unit (Control kit).
E201	Control Kit quantity is mismatched.	Control kit quantity must be matched with outdoor unit 1 by 1. Check the Control kit quantity. It must be 1EA.
E403	Detection of outdoor freezing when compressor stops.	Outdoor unit (Condenser) froze. Check condenser.
E404	Protection of outdoor overload when compressor stops.	Compressor is overloaded. Please check same as E461 and check compressor when it starts.
E416	Discharge temperature of a compressor in an outdoor unit is overheated.	Discharge temperature is overheated.
E440	Heating operation is not available since the outdoor air temperature is over 35℃.	Check the outdoor temperature.
E441	Cooling operation is not available since the outdoor air temperature is lower than -15℃.	
E465	Compressor over load error	Compressor is overloaded. Please check same as E461 and check compressor when it starts.
E468	Current sensor error	Exchange INVERTER PBA.
E471	Outdoor EEPROM error	EEPROM date is wrong. Exchange EEPROM or MAIN PBA. (This error don't occur in EMF 150-AM)
E474	IPM(IGBT Module) or PFCM temperature sensor error	Exchange INVERTER PBA.
E484	PFC overload error	Check reactor located in control plate. If reactor is normal, exchange INVERTER PBA.
E500	IPM is over heated.	Check INVERTER PBA's temperature. Power off and cool down INVERTER PBA, and then restart the outdoor unit.
E556	Capacity mismatching between indoor and outdoor	EEPROM data is wrong. Exchange EEPROM or MAIN PBA
E557	Option code miss matching among the indoors(only for DPM)	Option setting data is wrong. (This error don't occur in EMF 150-AM)

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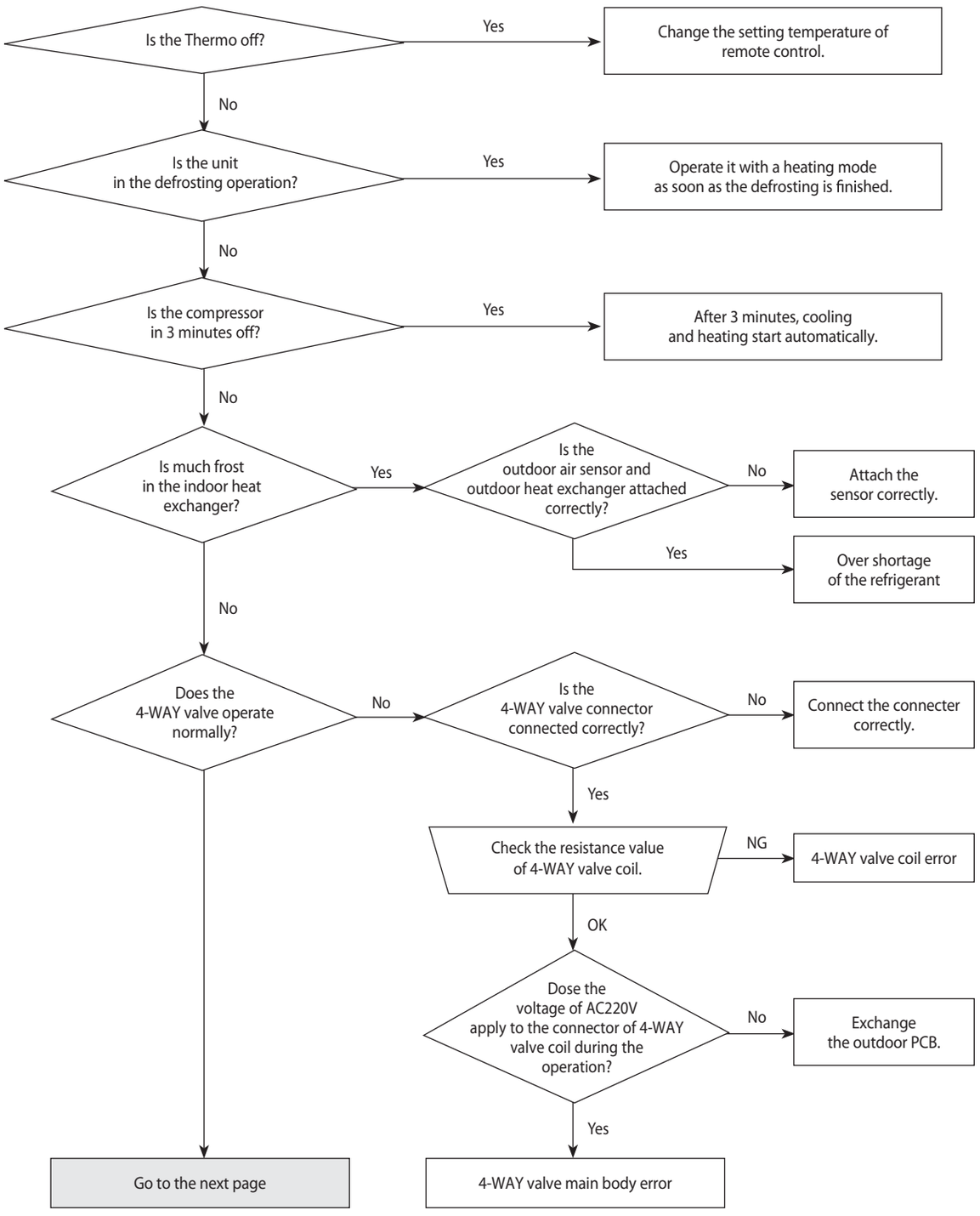
4-5-11 In case of heating at the cooling mode or cooling at the heating mode

1. Troubleshooting procedure


Is the Thermo off?
Yes
Change the setting temperature of remote control.
No
Is the unit in the defrosting operation?
Yes
Operate it with a heating mode as soon as the defrosting is finished.
No
Is the compressor in 3 minutes off?
Yes
After 3 minutes, cooling and heating start automatically.
No
Is much frost in the indoor heat exchanger?
Yes
Is the outdoor air sensor and outdoor heat exchanger attached correctly?
No
Attach the sensor correctly.
Yes
Over shortage of the refrigerant
No
Does the 4-WAY valve operate normally?
No
Is the 4-WAY valve connector connected correctly?
No
Connect the connecter correctly.
Yes
Check the resistance value of 4-WAY valve coil.
NG
4-WAY valve coil error
OK
Dose the voltage of AC220V apply to the connector of 4-WAY valve coil during the operation?
No
Exchange the outdoor PCB.
Yes
Go to the next page
4-WAY valve main body error

* Normal resistance value of 4 way valve coil : 1.5±0.15kΩ (at 20℃)

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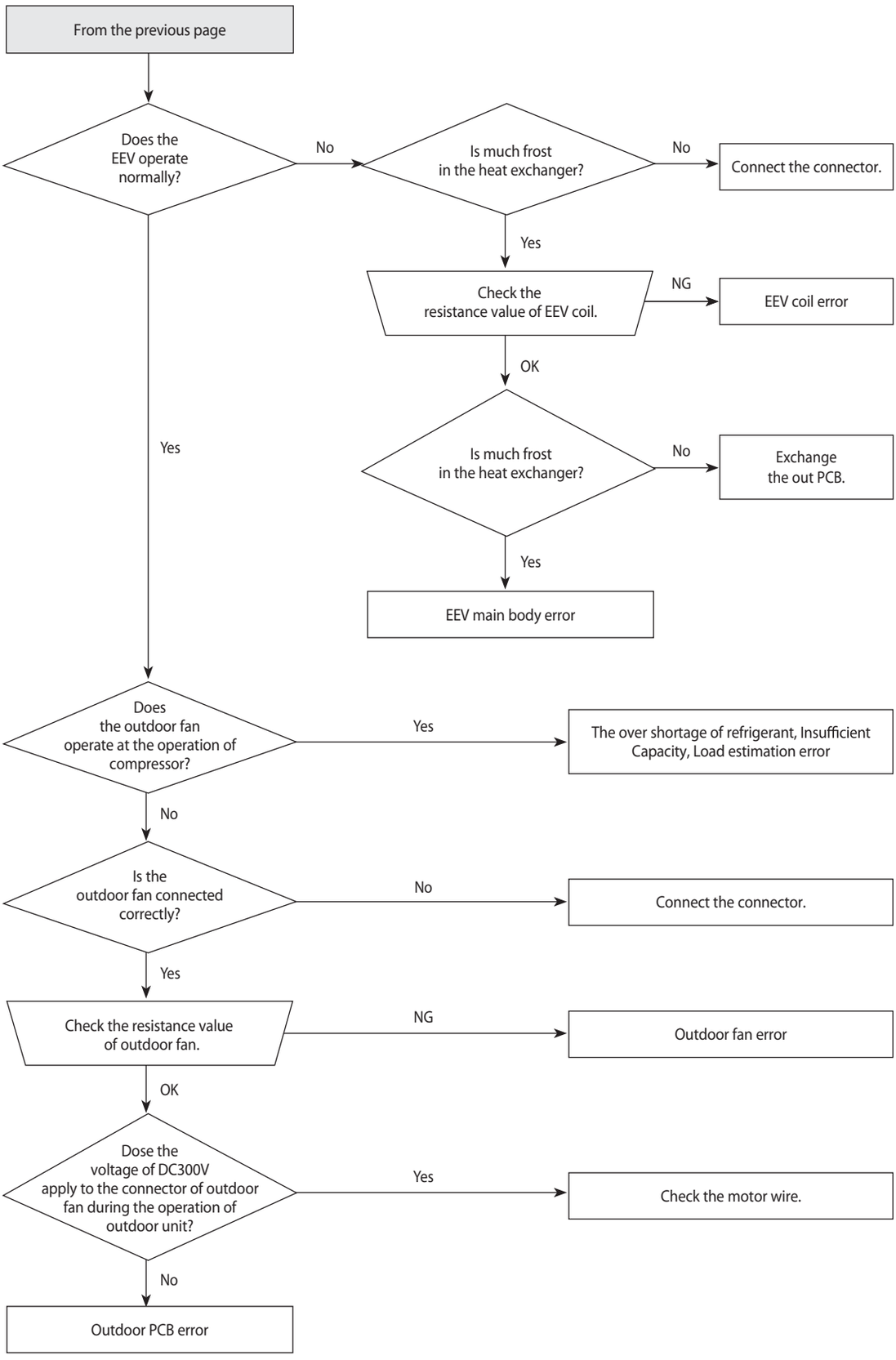
In case of heating at the cooling mode or cooling at the heating mode (cont.)



* Normal resistance value of EEV valve coil(Red-Black or Yellow-Orange) : 92±8Ω (at 20℃)

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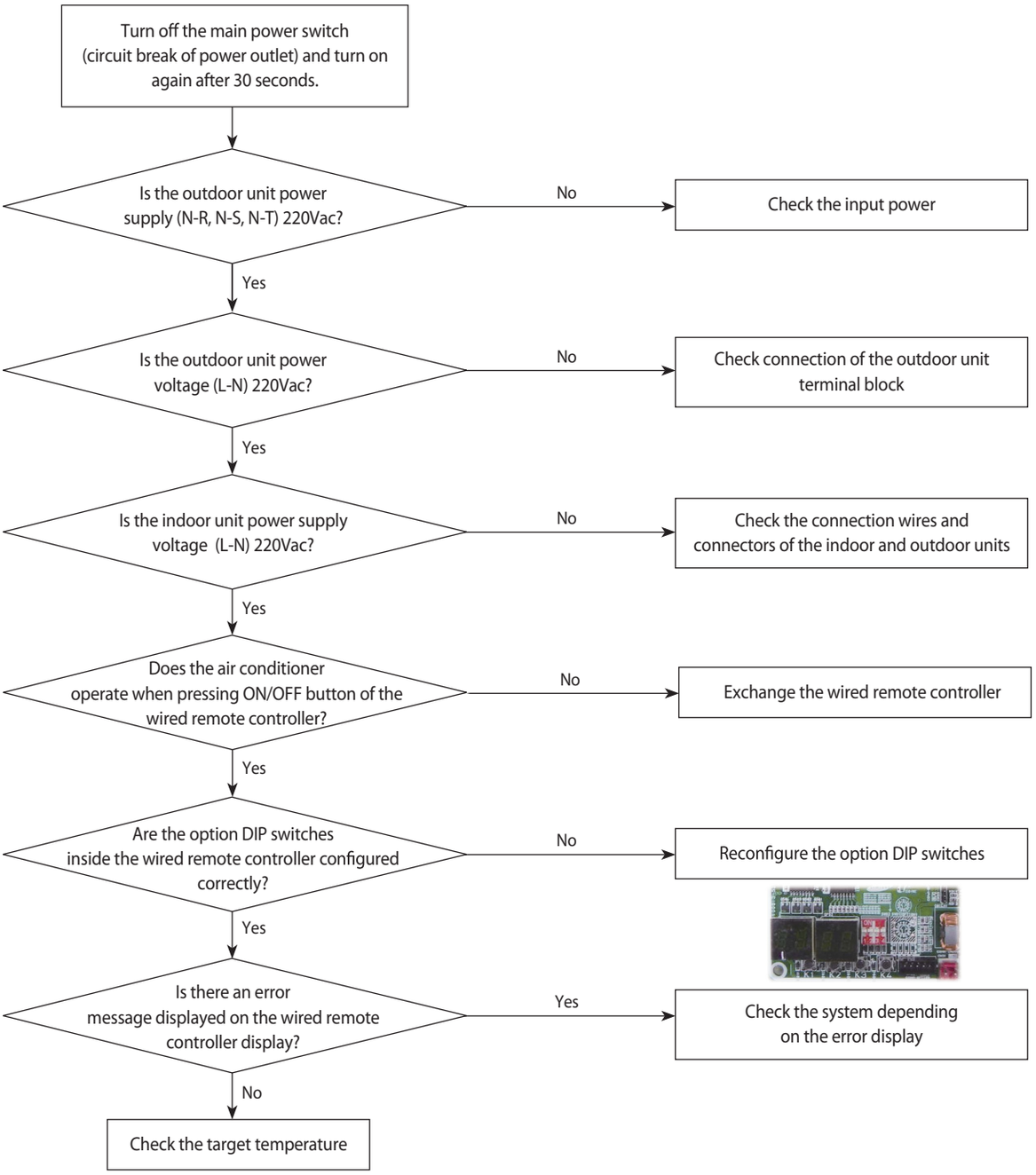
4-5-12 Outdoor unit is not powered on – Initial diagnosis

1. Check items
   1) Is the power supply voltage 380V?
   2) Is the AC power connected correctly?
   3) Are the LEDs in the main PCB and inverter PCB of the outdoor unit ON?
   4) Is the input power voltage of the indoor unit 220V?
   5) Is the wired remote controller connected correctly?

2. Check procedure


Turn off the main power switch (circuit break of power outlet) and turn on again after 30 seconds.
Is the outdoor unit power supply (N-R, N-S, N-T) 220Vac?
No
Check the input power
Yes
Is the outdoor unit power voltage (L-N) 220Vac?
No
Check connection of the outdoor unit terminal block
Yes
Is the indoor unit power supply voltage (L-N) 220Vac?
No
Check the connection wires and connectors of the indoor and outdoor units
Yes
Does the air conditioner operate when pressing ON/OFF button of the wired remote controller?
No
Exchange the wired remote controller
Yes
Are the option DIP switches inside the wired remote controller configured correctly?
No
Reconfigure the option DIP switches
Yes
Is there an error message displayed on the wired remote controller display?
Yes
Check the system depending on the error display
No
Check the target temperature

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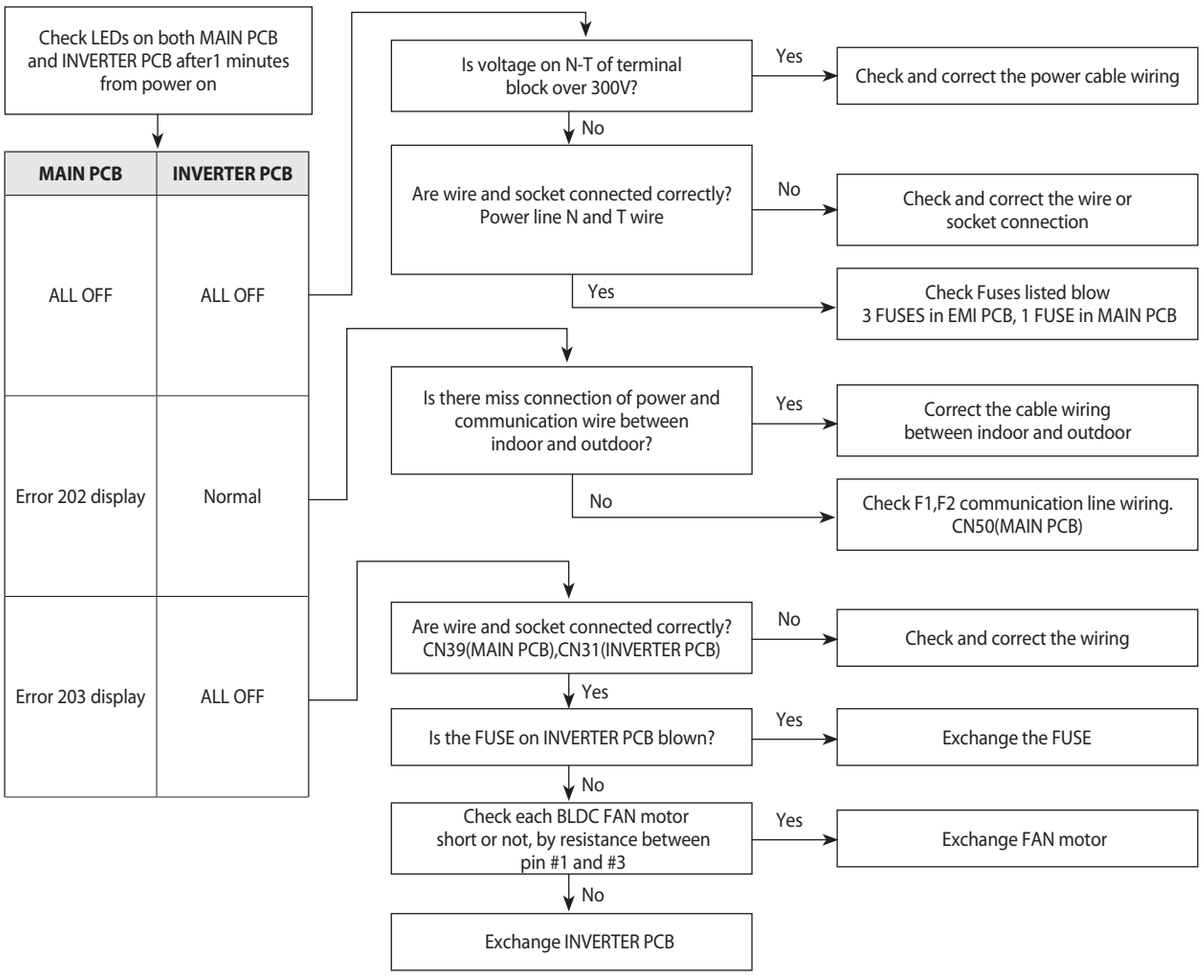
4-5-13 Outdoor unit power supply error

1. Checklist:
   1) Are the input power voltage and power connection correct?
   2) Is there any Fuse Short of the indoor or outdoor unit?
   3) Is any LED lit on both MAIN PCB and INVERTER PCB?
   4) Are Reactor wires of the outdoor unit connected correctly?

2. Troubleshooting procedure


Check LEDs on both MAIN PCB and INVERTER PCB after1 minutes from power on
MAIN PCB
INVERTER PCB
ALL OFF
ALL OFF
Error 202 display
Normal
Error 203 display
ALL OFF
Is voltage on N-T of terminal block over 300V?
Yes
Check and correct the power cable wiring
No
Are wire and socket connected correctly? Power line N and T wire
No
Check and correct the wire or socket connection
Yes
Check Fuses listed blow 3 FUSES in EMI PCB, 1 FUSE in MAIN PCB
Is there miss connection of power and communication wire between indoor and outdoor?
Yes
Correct the cable wiring between indoor and outdoor
No
Check F1,F2 communication line wiring. CN50(MAIN PCB)
Are wire and socket connected correctly? CN39(MAIN PCB),CN31(INVERTER PCB)
No
Check and correct the wiring
Yes
Is the FUSE on INVERTER PCB blown?
Yes
Exchange the FUSE
No
Check each BLDC FAN motor short or not, by resistance between pin #1 and #3
Yes
Exchange FAN motor
No
Exchange INVERTER PCB

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5. PCB Diagram

5-1 Control Kit

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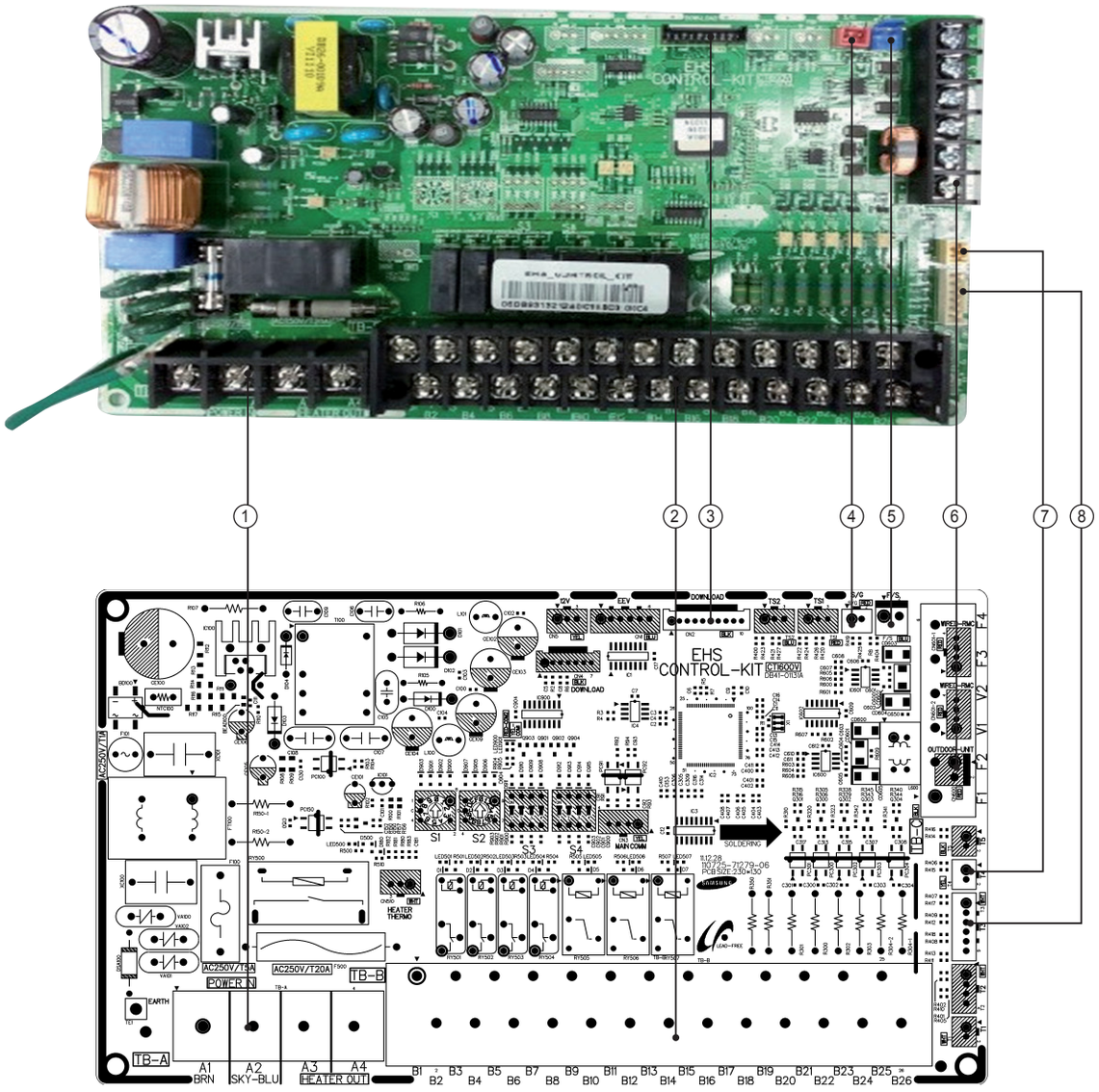

① **TB-A – POWER IN / HEATER** #1(L) : Phase L #2(N) : Phase N #3 : HEATER #4 : HEATER	② **TB-B – TERMINAL BLOCK** #1~26 : Check WIRING DIAGRAM	③ **CN2 - DOWNLOAD**	④ **S/G – SMART GRID** #1 : SMART GRID sensor #2 : GND
⑤ **F/S – FLOW S/W** #1 : FLOW SWITCH sensor #2 : GND	⑥ **TB-C – COM1/COM2 Communication** F1 : Communication signal F1 F2 : Communication signal F2 V1 : DC12V V2 : GND F3 : Communication signal F3 F4 : Communication signal F4	⑦ **T4 : WATER TANK sensor** #1 : WATER TANK sensor #2 : GND	⑧ **T3 : HEATER sensor** #1 : HEATER OUT sensor #2 : GND #3~#6 : Not used

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5-2 Outdoor Unit

MAIN PCB

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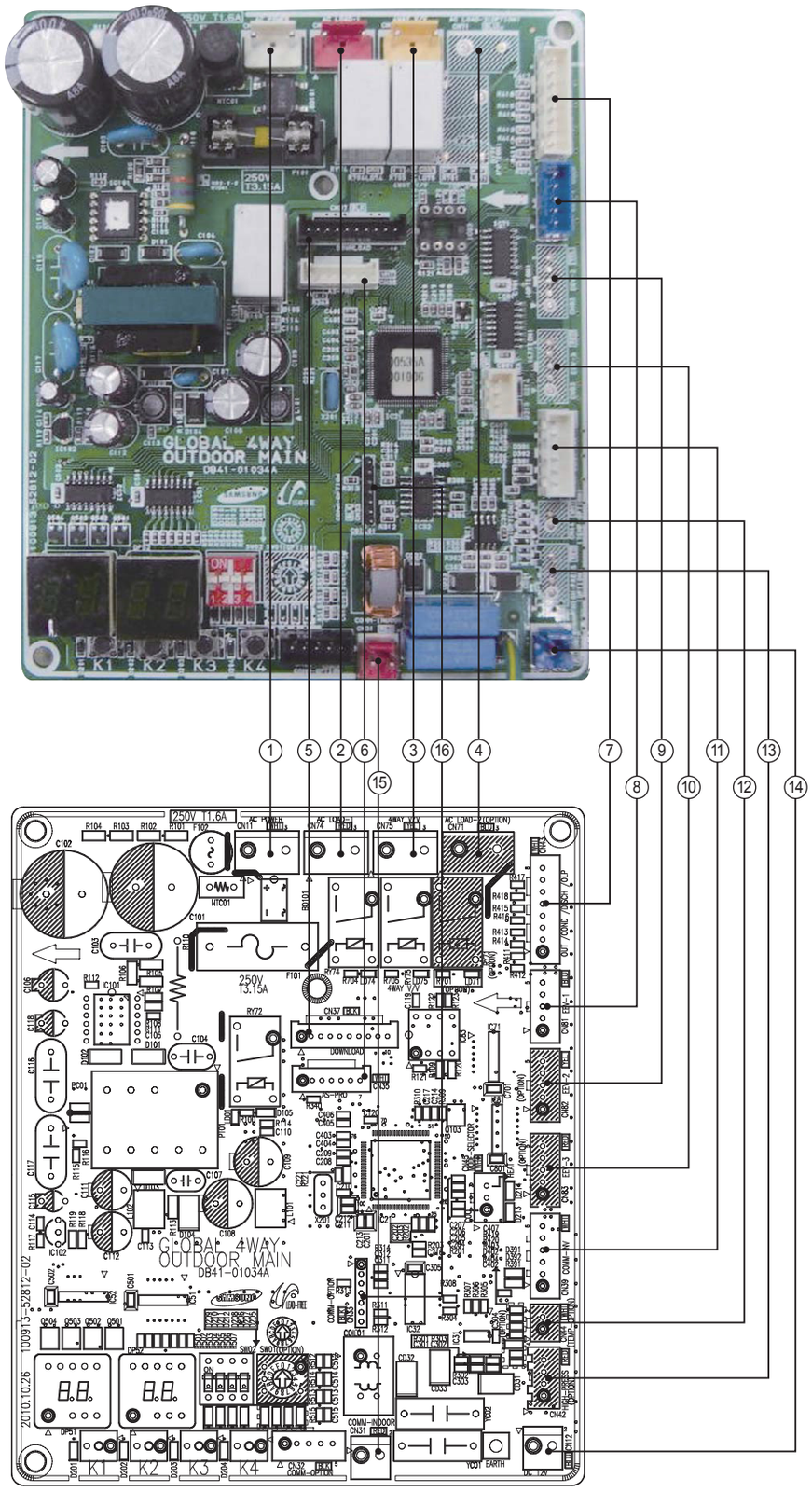

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① **CN11-AC POWER** #1-#3 : 220~240Vac	② **CN74-AC LOAD1** #1-#3 : 220~240Vac	③ **CN75-4WAY V/V** #1-#3 : 220~240Vac	④ **CN71-AC LOAD2(Option)** #1-#3 : 220~240Vac
⑤ **CN37-Micom Download** #1 : RXD_INV #2 : TXD_INV #3, #8 : N.C #4 ~ #7 : Data signal #9 : GND #10 : DC 5V	⑥ **CN35-AS-PRO** #1 : DC 5V #2 : MODE #3 : Reset #4~#6 : GRID_3/1/2 #7 : GND	⑦ **CN43-Sensor** #1-#2 : Outdoor Temp. #3-#4 : Cond. Temp. #5-#6 : Discharge Temp. #7-#8 : OLP Temp.	⑧ **CN81-EEV 1** #1~#4 : Motor signal #5 : DC 12V
⑨ **CN82-EEV 2(Option)** #1~#4 : Motor signal #5 : DC 12V	⑩ **CN83-EEV 3(Option)** #1~#4 : Motor signal #5 : DC 12V	⑪ **CN39-COMM-INV** #1 : TXD #2 : RXD #3 : GND #4 : DC 5V #5 : DC 12V #6 : INV. SMPS signal	⑫ **CN44-TEMP OPTION(Option)** #1 : Temp. signal #2 : GND
⑬ **CN42-High Pressure(Option)** #1 : High Pressure temp. signal #3 : GND #4 : DC 5V	⑭ **CN12-DC12V** #1 : DC 12V #2 : GND	⑮ **CN31-Comm.** #1 : COM1 #2 : COM2	⑯ **CN33-Sub Comm.** #1 : DC 12V #2 : GND #3 : DC 5V #4 : COM1 #5 : COM2

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INVERTER PCB

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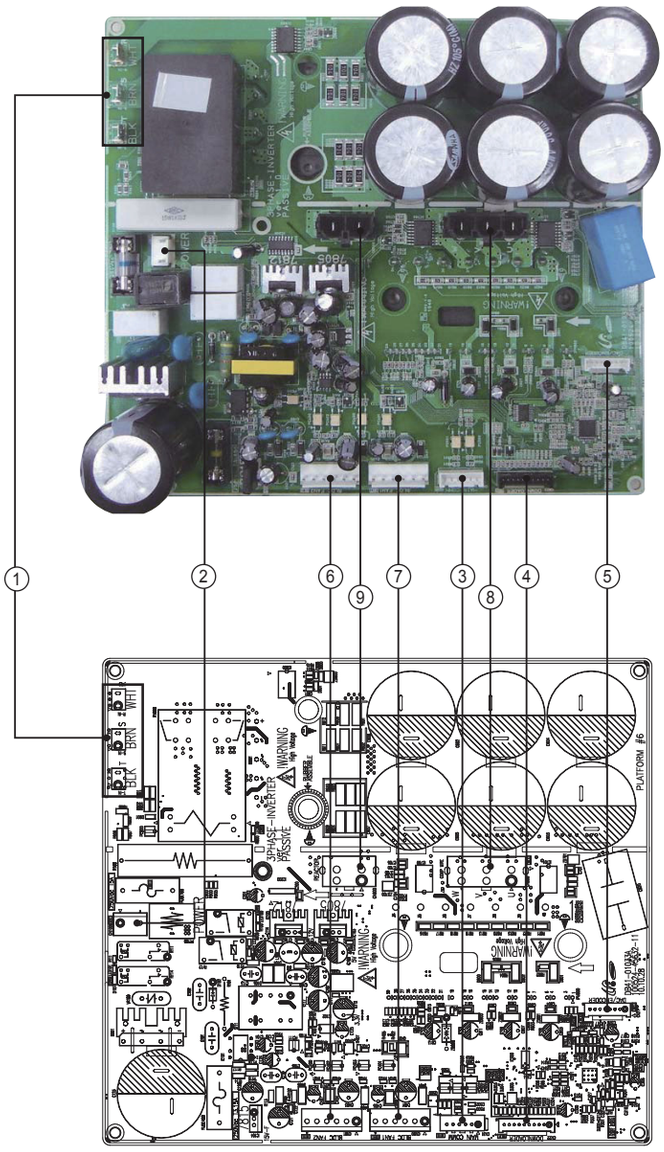

① **RST-AC POWER 3phase** #R : AC 380~400V : WHT #S : AC 380~400V : BRN #T : AC 380~400V : BLK	② **CN100-AC POWER** #1-#3 : AC 220~240V	③ **CN31-MAIN COMM** #1 : RXD , #2 : TXD #3 : GND, #4 : DC 5V #5 : DC 12V, #6 : INV. SMPS signal	④ **CN22-Downloader** #1 : RXD_ATARO, #2 : TXD_ATARO #3, #8 : N.C, #4~#7 : DATA signal #9 : GND, #10 : DC 5V
⑤ **CN21-DAC/ENCODER** For S/W engineer debugging	⑥ **CN91-FAN2** #1 : DC 360V, #2 : N.C #3 : GND, #4 : DC 15V #5 : FAN RPM, #6 : FAN RPM feedback	⑦ **CN90-FAN1** #1 : DC 360V, #2 : N.C #3 : GND, #4 : DC 15V #5 : FAN RPM, #6 : FAN RPM feedback	⑧ **CN800-COMP.** #1 : COMP. U-phase(RED) #2 : COMP. V-phase(BLU) #3 : COMP. U-phase(YEL)
⑨ **CN600-REACTOR** #1-#2 : DCL Reactor			

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EMI PCB

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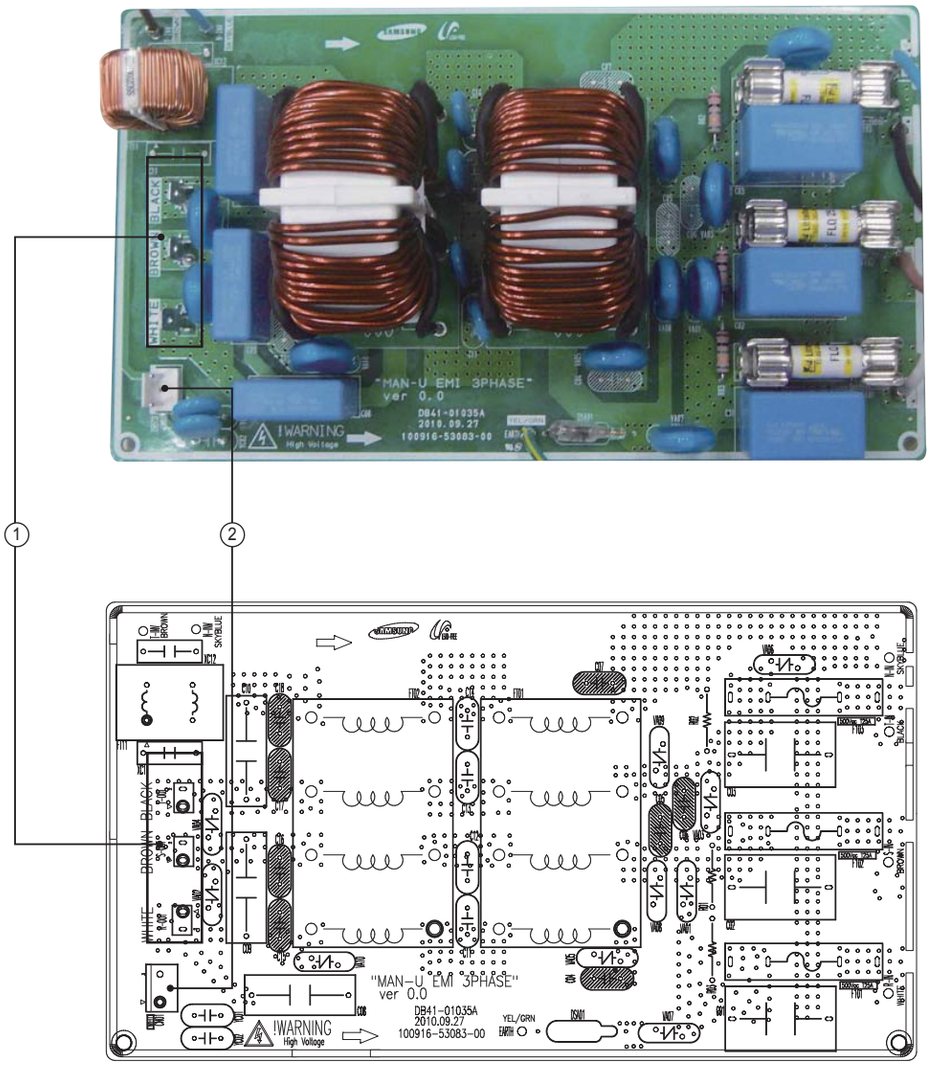

① RST-AC POWER 3phase	② CN100-AC POWER
#R : AC 380~400V : WHT #S : AC 380~400V : BRN #T : AC 380~400V : BLK	#1-#3 : AC 220~240V

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Heater PCB

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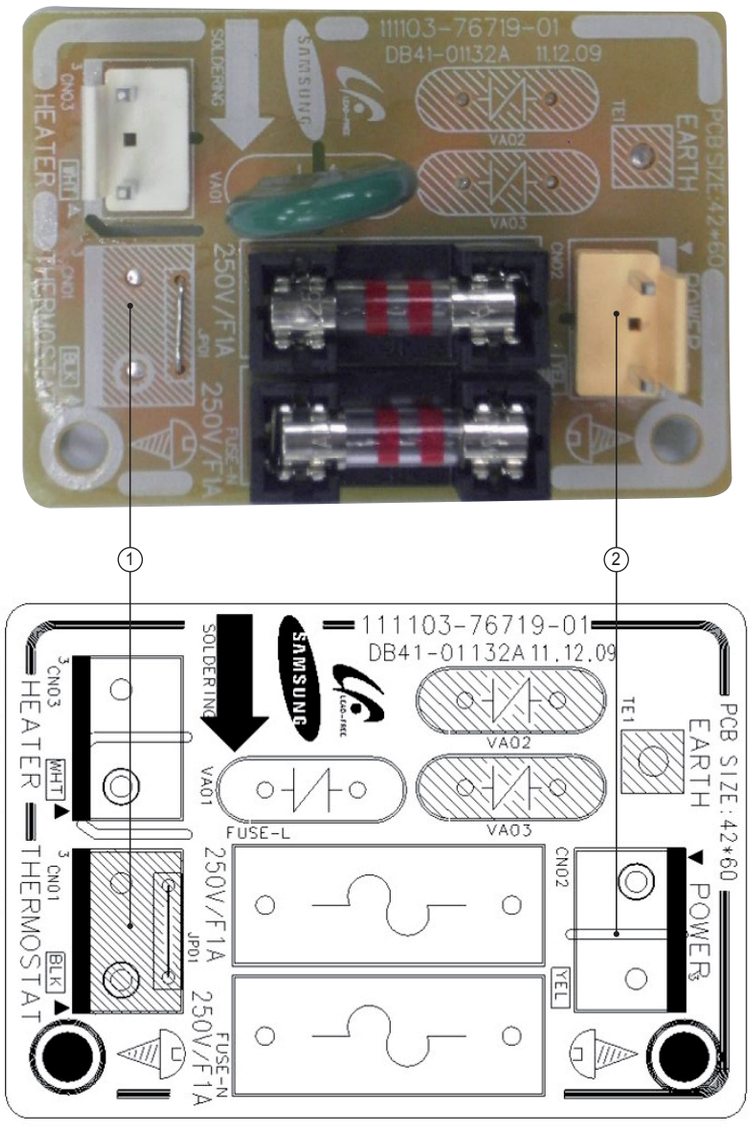

① AC POWER INPUT	② AC POWER OUTPUT
#1 AC POWER LINE - LIVE #2 AC POWER LINE - NEUTRAL	#1 AC POWER LINE - LIVE #2 AC POWER LINE - NEUTRAL

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5-3 Parts List

MAIN PCB

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
	DB93-11109D	ASSY PCB MAIN-OUT	EHS Remko 14KW,Inverter Platform #4, #5, #6 MAIN,Y,SMPS,TOP264VG,5Vdc, 12Vdc	1	PC	SA
	DB93-11363C	ASSY PCB MANUAL	EHS Outdoor Main,14KW REMKO	1	PC	SNA
ADHESIVE-SILICON	0201-001982	ADHESIVE-SIL	TSE3854DS-W,White,2.2,MIL-A-46146B,UL94V-0	0.005	KG	SNA
SOLDER-BAR	0202-001338	SOLDER-BAR	LeeD-free Solder BAR,W20L350H8,99.3Sn/0.7Cu/0.01 P	10	G	SNA
SOLDER-WIRE	0202-001608	SOLDER-WIRE FLUX	LFC7-107,D0.8,99.3Sn/0.7Cu/0.01P,Flux3-4%	2	G	SNA
FLUX	0204-002978	FLUX	KSP-70M,84%,FLUX,SPRAY	1	G	SNA
SOLVENT	0204-003174	SOLVENT	S-E70,R-OH,100%,0.790	2	G	SNA
IC102	1203-000002	IC-POSI.ADJUST REG.	431,TO-92,3P,-,PLASTIC,2.44/2.58V,775MV,0TO+70C,100MA,-,ST,-	1	PC	SNA
IC101	1203-006612	IC-PWM CONTROLLER	TOP264VG,DIP,12P,10.16x10.46mm,PLASTIC,TP	1	PC	SNA
NTC01	1404-001274	THERMISTOR-NTC	22ohm,1.4A,3100K,9.5mW/C,-,7.0,-	1	PC	SNA
X201	2802-001179	RESONATOR-CERAMIC	4MHZ,0.5%,BK,8X3X5.5MM	1	PC	SNA
K1	3404-000165	SWITCH-TACT	12V,50mA,160gf,6x6x5,SPST	1	PC	SNA
K2	3404-000165	SWITCH-TACT	12V,50mA,160gf,6x6x5,SPST	1	PC	SNA
K3	3404-000165	SWITCH-TACT	12V,50mA,160gf,6x6x5,SPST	1	PC	SNA
K4	3404-000165	SWITCH-TACT	12V,50mA,160gf,6x6x5,SPST	1	PC	SNA
SW02	3407-000121	SWITCH-DIP	24V,300mA,SLIDE,STANDARD	1	PC	SNA
RY72	3501-001163	RELAY-MINIATURE	12V,200mW,5000mA,1FormA,10ms,5ms	1	PC	SNA
RY73	3501-001163	RELAY-MINIATURE	12V,200mW,5000mA,1FormA,10ms,5ms	1	PC	SNA
RY74	3501-001163	RELAY-MINIATURE	12V,200mW,5000mA,1FormA,10ms,5ms	1	PC	SNA
FUSE02	3601-000263	FUSE-CARTRIDGE	250V,3.15A,TIME-LAG,GLASS,5x20mm	1	PC	SA
F101	3602-001012	FUSE-BLOCK	500V,-,100MOhm	1	PC	SNA
IC83	3704-001601	SOCKET-IC	8P,SN,2.54mm	1	PC	SNA
CN45	3711-000024	HEADER-BOARD TO CABLE	BOX,3P,1R,2.5MM,STRAIGHT,SN,WHT	1	PC	SNA
CN12	3711-000176	HEADER-BOARD TO CABLE	1WALL,2P,1R,3.96mm,STRAIGHT,SN,BLU	1	PC	SNA
CN31	3711-000177	HEADER-BOARD TO CABLE	1WALL,2P,1R,3.96MM,STRAIGHT,SN,RED	1	PC	SNA
CN11	3711-000203	HEADER-BOARD TO CABLE	1WALL,2P/3P,1R,7.92mm,STRAIGHT,SN,WHT	1	PC	SNA
CN32	3711-000996	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN,BLK	1	PC	SNA
CN81	3711-000997	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN,BLU	1	PC	SNA
CN39	3711-001038	HEADER-BOARD TO CABLE	BOX,6P,1R,2.5mm,STRAIGHT,SN,WHT	1	PC	SNA
CN43	3711-001084	HEADER-BOARD TO CABLE	BOX,8P,1R,2.5MM,STRAIGHT,SN,WHT	1	PC	SNA
CN75	3711-003406	HEADER-BOARD TO CABLE	1WALL,2P,1R,7.92MM,STRAIGHT,SN,YEL	1	PC	SNA
CN74	3711-003407	HEADER-BOARD TO CABLE	1WALL,2P,1R,7.92MM,STRAIGHT,SN,RED	1	PC	SNA
CN35	3711-003873	HEADER-BOARD TO CABLE	BOX,7P,1R,2mm,STRAIGHT,SN,WHT	1	PC	SNA
CN37	3711-005716	HEADER-BOARD TO CABLE	BOX,10P,1R,2mm,STRAIGHT,SN,BLK	1	PC	SNA
CN33	3711-007422	HEADER-BOARD TO BOARD	7P,1R,2mm,STRAIGHT,BRASS,BLK	1	PC	SNA
DP51	DB07-00054A	LED DISPLAY	SSD-A3202GS-A13,LED DISPLAY,2 DIGIT,16 SEGMENT,2 DIGIT,16.6x16x13mm,GREEN,50mW,9	1	PC	SNA
DP52	DB07-00054A	LED DISPLAY	SSD-A3202GS-A13,LED DISPLAY,2 DIGIT,16 SEGMENT,2 DIGIT,16.6x16x13mm,GREEN,50mW,9	1	PC	SNA
PT01	DB26-00122A	TRANS SWITCHING	EE2525,RC100PHXEA,GLOBAL 4WAY,310V,200~400V,PL-7, PM-7,5V,12V,ER25*25 V10,50HZ,1.56mH,MULTI OUTPUT	1	PC	SNA

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MAIN PCB(cont.)

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
COIL01	DB27-00082A	COIL CHOKE	CV305400SJ,RC100PHXEA,GLOBAL 4WAY,40mH,+50~-30%,706mohm,0.5A,13*7*5,16*18.5*10,3.4mm*8.4mm,1.2mm,PAD,-25℃~+105℃	1	PC	SNA
ASSY CW EARTH	DB93-05379G	ASSY CONNECTOR WIRE EARTH	RC140RHXEA	1	PC	SNA
	DB93-11372C	ASSY PCB AUTO	EHS Outdoor Main,14KW REMKO	1	PC	SNA
R110	2003-000855	R-METAL OXIDE(S)	47Kohm,5%,3W,AA,TP,6x16mm	1	PC	SNA
C103	2201-000322	C-CERAMIC,DISC	2.2nF,10%,2000V,Y5P,13x5mm,10mm	1	PC	SNA
C107	2201-000551	C-CERAMIC,DISC	0.47nF,10%,1000V,Y5P,6.3x5mm,5mm	1	PC	SNA
C104	2201-000983	C-CERAMIC,DISC	1nF,10%,2000V,Y5P,TP,9x5mm,7.5mm	1	PC	SNA
C116	2201-000987	C-CERAMIC,DISC	2.2nF,20%,400V,Y5U,TP,12.5x6mm,10mm	1	PC	SNA
C117	2201-000987	C-CERAMIC,DISC	2.2nF,20%,400V,Y5U,TP,12.5x6mm,10mm	1	PC	SNA
YC01	2301-001220	C-FILM,LEAD-PPF	100nF,10%,275V,BK,18x6x12mm	1	PC	SNA
YC02	2301-001220	C-FILM,LEAD-PPF	100nF,10%,275V,BK,18x6x12mm	1	PC	SNA
C118	2401-000481	C-AL	10uF,20%,50V,WT,TP,5x11,5	1	PC	SNA
C111	2401-001103	C-AL	330uF,20%,16V,WT,TP,8x11.5mm,5	1	PC	SNA
C112	2401-001103	C-AL	330uF,20%,16V,WT,TP,8x11.5mm,5	1	PC	SNA
C108	2401-001838	C-AL	470uF,20%,25V,WT,TP,10x16,5	1	PC	SNA
C109	2401-001838	C-AL	470uF,20%,25V,WT,TP,10x16,5	1	PC	SNA
C106	2401-002438	C-AL	47uF,20%,50V,WT,TP,6.3x11,5mm	1	PC	SNA
C115	2401-003645	C-AL	1UF,20%,50V,WT,TP,4X5MM,5	1	PC	SNA
C101	2401-003861	C-AL	68UF,20%,400V,WT,TP,18X25MM,7.5	1	PC	SNA
C102	2401-003861	C-AL	68UF,20%,400V,WT,TP,18X25MM,7.5	1	PC	SNA
F102	3601-001308	FUSE	250V,1.6A,TIME-LAG,PLASTIC,8.4x7.6mm	1	PC	SNA
	DB93-11369C	ASSY PCB SMD	EHS Outdoor Main,14KW REMKO	1	PC	SNA
SOLDER-CREAM	0202-001459	SOLDER-CREAM	S3X58-M405,D20~38um,96.5Sn/3Ag/0.5Cu,FLUX 5%	10	G	SNA
D105	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D201	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D202	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D203	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D204	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D209	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D210	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D211	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D212	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D213	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D214	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D391	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D392	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D104	0402-001192	DIODE-RECTIFIER	ES2D,200V,2A,SMB,TP	1	PC	SNA
BD101	0402-001298	DIODE-BRIDGE	DF06S,600V,1A,SMD-4,TP	1	PC	SNA
D102	0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	1	PC	SNA
D103	0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	1	PC	SNA
D101	0402-001429	DIODE-RECTIFIER	US1J,600V,1A,DO-214AC,TP	1	PC	SNA
CD31	0406-001204	DIODE-TVS	SMBJ5.0CA,6.4/-/7.25V,600W,SMB	1	PC	SNA
CD32	0406-001204	DIODE-TVS	SMBJ5.0CA,6.4/-/7.25V,600W,SMB	1	PC	SNA

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MAIN PCB(cont.)

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
CD33	0406-001204	DIODE-TVS	SMBJ5.0CA,6.4/-/7.25V,600W,SMB	1	PC	SNA
Q501	0504-000001	TR-DIGITAL	DTA114EKA,PNP,200mW,10K/10K,SOT-23,TP	1	PC	SNA
Q502	0504-000001	TR-DIGITAL	DTA114EKA,PNP,200mW,10K/10K,SOT-23,TP	1	PC	SNA
Q503	0504-000001	TR-DIGITAL	DTA114EKA,PNP,200mW,10K/10K,SOT-23,TP	1	PC	SNA
Q504	0504-000001	TR-DIGITAL	DTA114EKA,PNP,200mW,10K/10K,SOT-23,TP	1	PC	SNA
Q103	0504-000127	TR-DIGITAL	FJV3102R,NPN,200mW,10K/10Kohm,SOT-23,TP	1	PC	SNA
IC51	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	PC	SNA
IC52	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	PC	SNA
IC71	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	PC	SNA
IC81	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	PC	SNA
LD74	0601-001816	LED	SMD,Y-GRN,1.6X0.8X0.55MM,570NM,1.6X0.8X0.55MM	1	PC	SNA
LD75	0601-001816	LED	SMD,Y-GRN,1.6X0.8X0.55MM,570NM,1.6X0.8X0.55MM	1	PC	SNA
LD01	0601-002345	LED	SMD,RED,1.6x0.8x0.55mm,660nm,1.6x0.8x0.55mm	1	PC	SNA
PC01	0604-001172	PHOTO-COUPLER	TR,150-300,200mW,SOP,TP	1	PC	SNA
IC32	0801-000393	IC-CMOS LOGIC	74HC86,OR GATE,SOP,14P,150MIL,QUAD,ST,- ,2.0/6.0V,0.26V,- 40to+85C,180mW,4.2V,1uA,	1	PC	SNA
IC31	1006-001325	IC-BUS TRANSCEIVER	ISL81487LIBZ,SO,8P,4.9x3.8 mm,SINGLE,ST,PLASTIC,5V,- 40to+85C,520mW,1,1,1.5/5.0V	1	PC	SNA
R202	2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	PC	SNA
R203	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R309	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R310	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R411	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R413	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R415	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R417	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R121	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R302	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R303	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R501	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R502	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R503	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R504	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R505	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R506	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R507	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R704	2007-000082	R-CHIP	3.3Kohm,5%,1/10W,TP,1608	1	PC	SNA
R705	2007-000082	R-CHIP	3.3Kohm,5%,1/10W,TP,1608	1	PC	SNA
R304	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R305	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R306	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R307	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R308	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R311	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R312	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA

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MAIN PCB(cont.)

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
R313	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R314	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R391	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R512	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R513	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R514	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R515	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R201	2007-000116	R-CHIP	120ohm,5%,1/10W,TP,1608	1	PC	SNA
R301	2007-000116	R-CHIP	120ohm,5%,1/10W,TP,1608	1	PC	SNA
R100	2007-000134	R-CHIP	33Kohm,5%,1/10W,TP,1608	1	PC	SNA
R221	2007-000238	R-CHIP	1.5Kohm,1%,1/8W,TP,2012	1	PC	SNA
R118	2007-000297	R-CHIP	10Kohm,1%,1/8W,TP,2012	1	PC	SNA
R119	2007-000297	R-CHIP	10Kohm,1%,1/8W,TP,2012	1	PC	SNA
R111	2007-000409	R-CHIP	15Kohm,5%,1/8W,TP,2012	1	PC	SNA
R108	2007-000441	R-CHIP	180Kohm,1%,1/8W,TP,2012	1	PC	SNA
R412	2007-000455	R-CHIP	18Kohm,1%,1/10W,TP,1608	1	PC	SNA
R414	2007-000455	R-CHIP	18Kohm,1%,1/10W,TP,1608	1	PC	SNA
R101	2007-000481	R-CHIP	1Mohm,5%,1/4W,TP,3216	1	PC	SNA
R102	2007-000481	R-CHIP	1Mohm,5%,1/4W,TP,3216	1	PC	SNA
R103	2007-000481	R-CHIP	1Mohm,5%,1/4W,TP,3216	1	PC	SNA
R104	2007-000481	R-CHIP	1Mohm,5%,1/4W,TP,3216	1	PC	SNA
R113	2007-000592	R-CHIP	22ohm,1%,1/4W,TP,3216	1	PC	SNA
R416	2007-000614	R-CHIP	24Kohm,1%,1/10W,TP,1608	1	PC	SNA
R418	2007-000614	R-CHIP	24Kohm,1%,1/10W,TP,1608	1	PC	SNA
R117	2007-000683	R-CHIP	3.3Kohm,1%,1/10W,TP,1608	1	PC	SNA
R114	2007-000701	R-CHIP	3.6Kohm,1%,1/10W,TP,1608	1	PC	SNA
R340	2007-000869	R-CHIP	4.7Kohm,1%,1/10W,TP,1608	1	PC	SNA
R109	2007-000941	R-CHIP	47Kohm,5%,1/8W,TP,2012	1	PC	SNA
R120	2007-000941	R-CHIP	47Kohm,5%,1/8W,TP,2012	1	PC	SNA
R115	2007-001131	R-CHIP	68ohm,1%,1/10W,TP,1608	1	PC	SNA
R105	2007-007385	R-CHIP	1.2Mohm,1%,1/4w,TP,3216	1	PC	SNA
R106	2007-007385	R-CHIP	1.2Mohm,1%,1/4w,TP,3216	1	PC	SNA
R107	2007-007385	R-CHIP	1.2Mohm,1%,1/4w,TP,3216	1	PC	SNA
R112	2007-010635	R-CHIP	6.8ohm,1%,1/10,TP,1608	1	PC	SNA
C301	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C302	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C303	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C512	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C513	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C514	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C515	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C120	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C215	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C203	2203-002304	C-CER,CHIP	10pF,5%,50V,TH,BK,1608,-	1	PC	SNA
C105	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C110	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C113	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA

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MAIN PCB(cont.)

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
C114	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C119	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C202	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C204	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C205	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C206	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C207	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C208	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C209	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C211	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C212	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C213	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C214	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C216	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C217	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C304	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C305	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C311	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C312	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C403	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C404	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C405	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C406	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C501	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C502	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C701	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C801	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C201	2203-006348	C-CER,CHIP	1000nF,10%,25V,X5R,TP,1608	1	PC	SNA
C210	2203-006348	C-CER,CHIP	1000nF,10%,25V,X5R,TP,1608	1	PC	SNA
C221	2203-006348	C-CER,CHIP	1000nF,10%,25V,X5R,TP,1608	1	PC	SNA
L101	2703-002297	INDUCTOR-SMD	4.7uH,20%,6060	1	PC	SNA
L102	2703-002297	INDUCTOR-SMD	4.7uH,20%,6060	1	PC	SNA
PCB	DB41-01034A	PCB MAIN-OUT	GLOBAL-4WAY OUTDOOR,FR-4,2,ver 2.4,T1.6,120*142,UB1, UB2, UB3,Outdoor,Inverter Platform #4, #5, #6 MAIN,600	1	PC	SNA
IC21	DB91-01333A	ASSY-MIC	Gen3 Outdoor,STM-10A5-OS, S3F4A1H, 100TQFP, ROM 512KB	1	PC	SNA
	DB09-00535A	IC MICOM	S3F4A1H,100P,DC5V,12 MHz,TQFP,16 Bit,16 Bit,TQFP,QFP,16 Bit,-40~+105,512K	1	PC	SNA

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INVERTER PCB

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
-	DB93-11114A	ASSY PCB MAIN-INVERTER	RC100DHXGA, RC100PHXGA, RC125PHXGA, RC125DHXGA,Inverter Platform #6,Y,SMPS,TOP243P,3.3V, 5V, 12V, 15V	1	PC	SA
-	DB93-11362A	ASSY PCB MANUAL	RC100DHXGA, RC140DHXGA,Inverter #6, 3phase	1	PC	SNA
ADHESIVE-SILICON	0201-001982	ADHESIVE-SIL	TSE3854DS-W,White,2.2,MIL-A-46146B,UL94V-0	0.02	KG	SNA
SOLDER BAR	0202-001338	SOLDER-BAR	LeeD-free Solder BAR,W20L350H8,99.3Sn/0.7Cu/0.01P	12.4	G	SNA
SOLDER WIRE	0202-001608	SOLDER-WIRE FLUX	LFC7-107,D0.8,99.3Sn/0.7Cu/0.01P,Flux3-4%	3.2	G	SNA
FLUX	0204-002978	FLUX	KSP-70M,84%,FLUX,SPRAY	10	G	SNA
SOLVENT	0204-003174	SOLVENT	S-E70,R-OH,100%,0.790	10	G	SNA
IC601	0402-001994	DIODE-BRIDGE	DF30NA160,1600V,30A,SIP-5,ST	1	PC	SNA
IC104	1203-002735	IC-POSI.FIXED REG.	KIA7815API,TO-220IS,3P,10.3x15.3mm,PLASTIC,14.4/15.6V, 2W,-30to+150,1A,ST	1	PC	SNA
IC101	1203-003527	IC-PWM CONTROLLER	TOP243,DIP,7P,9.83x6.6mm,plastic,-0.3/700V,25W,-40to+150,1.44A,TP	1	PC	SNA
PT100	1404-001498	THERMISTOR-PTC	40ohm,25%,290Vac,7A,TR	1	PC	SNA
VA100	1405-000154	VARISTOR	460Vdc,2500A,17.5x7.5mm,TP	1	PC	SNA
C820	2301-001830	C-FILM,MPEF	1000nF,5%,1000V,BK,28x18x31	1	PC	SNA
C602	2401-004278	C-AL	560uF,20%,400V,WT,BK,35x50mm,14.2mm	1	PC	SNA
C603	2401-004278	C-AL	560uF,20%,400V,WT,BK,35x50mm,14.2mm	1	PC	SNA
C604	2401-004278	C-AL	560uF,20%,400V,WT,BK,35x50mm,14.2mm	1	PC	SNA
C605	2401-004278	C-AL	560uF,20%,400V,WT,BK,35x50mm,14.2mm	1	PC	SNA
C606	2401-004278	C-AL	560uF,20%,400V,WT,BK,35x50mm,14.2mm	1	PC	SNA
C607	2401-004278	C-AL	560uF,20%,400V,WT,BK,35x50mm,14.2mm	1	PC	SNA
C123	2401-004279	C-AL	560uF,20%,400V,WT,BK,35x50mm,14.2mm	1	PC	SNA
L100	2702-001123	INDUCTOR-RADIAL	4.7uH,10%,6.5x7.5mm	1	PC	SNA
RY12	3501-001163	RELAY-MINIATURE	12V,200mW,5000mA,1FormA,10ms,5ms	1	PC	SNA
RY13	3501-001163	RELAY-MINIATURE	12V,200mW,5000mA,1FormA,10ms,5ms	1	PC	SNA
RY11	3501-001264	RELAY-POWER	12V,200mW,5000mA,1FormA,10ms,10ms	1	PC	SNA
RY14	3501-001264	RELAY-POWER	12V,200mW,5000mA,1FormA,10ms,10ms	1	PC	SNA
RY600	3501-001411	RELAY-POWER	12V,30000mA,2FormA	1	PC	SNA
FUSE400-1	3601-000263	FUSE-CARTRIDGE	250V,3.15A,TIME-LAG,GLASS,5x20mm	1	PC	SA
FUSE100-1	3601-000297	FUSE-CARTRIDGE	250V,5A,TIME-LAG,GLASS,5.2x20mm	1	PC	SA
FUSE100	3602-001012	FUSE-BLOCK	500V,-,100MOhm	1	PC	SNA
FUSE400	3602-001012	FUSE-BLOCK	500V,-,100MOhm	1	PC	SNA
CN100	3711-000203	HEADER-BOARD TO CABLE	1WALL,2P/3P,1R,7.92mm,STRAIGHT,SN,WHT 1	1	PC	SNA
CN90	3711-000296	HEADER-BOARD TO CABLE	1WALL,6P,1R,3.96MM,STRAIGHT,SN,WHT	1	PC	SNA
CN91	3711-000296	HEADER-BOARD TO CABLE	1WALL,6P,1R,3.96MM,STRAIGHT,SN,WHT	1	PC	SNA
CN31	3711-001038	HEADER-BOARD TO CABLE	BOX,6P,1R,2.5mm,STRAIGHT,SN,WHT	1	PC	SNA
CN21	3711-003843	HEADER-BOARD TO CABLE	BOX,8P,1R,2mm,STRAIGHT,SN,WHT	1	PC	SNA
CN800	3711-007276	CONNECTOR-HEADER	3P,1R,10mm,STRAIGHT,AU,BLK	1	PC	SNA
CN600	3711-007649	CONNECTOR-HEADER	2,1R,10mm,STRAIGHT,BRASS,BLK	1	PC	SNA
CN22	3711-007706	HEADER-BOARD TO CABLE	BOX,10P,1R,2mm,STRAIGHT,SN,RED	1	PC	SNA
R-IN	3712-001139	CONNECTOR-TERMINAL	TAB,MALE,6.35x0.8mm	1	PC	SNA
S-IN	3712-001139	CONNECTOR-TERMINAL	TAB,MALE,6.35x0.8mm	1	PC	SNA
T-IN	3712-001139	CONNECTOR-TERMINAL	TAB,MALE,6.35x0.8mm	1	PC	SNA
IPM800	4719-002494	POWER MODULE I	IPM,1200V/35A	1	PC	SNA
ST11	DB26-00123A	TRANS SWITCHING	EE2218,RC100PHXEA,GLOBAL 4WAY,310V,200~400V,PL-7, PM-1 PCSNA	1	PC	SNA
	DB93-11373A	ASSY PCB AUTO	RC100DHXGA, RC140DHXGA,Inverter #6, 1phase	1	PC	SNA
D102	0402-000012	DIODE-RECTIFIER	UF4007,1000V,1A,DO-41,TP	1	PC	SNA
ZD800	0406-001434	DIODE-TVS	P6KE18A,200,185,215,DO-15	1	PC	SNA

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INVERTER PCB(cont.)

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
R101	2003-000855	R-METAL OXIDE(S)	47Kohm,5%,3W,AA,TP,6x16mm	1	PC	SNA
R108	2006-001149	R-CEMENT,NON	1Kohm,5%,15W,CA,BK,48x12.5x12.5mm	1	PC	SNA
C101	2201-000154	C-CERAMIC,DISC	10nF,+80-20%,2000V,Y5P,20x5mm,7.5mm	1	PC	SNA
C102	2201-000322	C-CERAMIC,DISC	2.2nF,10%,2000V,Y5P,13x5mm,10mm	1	PC	SNA
C103	2201-000551	C-CERAMIC,DISC	0.47nF,10%,1000V,Y5P,6.3x5mm,5mm	1	PC	SNA
C106	2201-000551	C-CERAMIC,DISC	0.47nF,10%,1000V,Y5P,6.3x5mm,5mm	1	PC	SNA
C113	2201-000551	C-CERAMIC,DISC	0.47nF,10%,1000V,Y5P,6.3x5mm,5mm	1	PC	SNA
C119	2201-000551	C-CERAMIC,DISC	0.47nF,10%,1000V,Y5P,6.3x5mm,5mm	1	PC	SNA
C104	2401-000481	C-AL	10uF,20%,50V,WT,TP,5x11,5	1	PC	SNA
C124	2401-000481	C-AL	10uF,20%,50V,WT,TP,5x11,5	1	PC	SNA
C125	2401-000481	C-AL	10uF,20%,50V,WT,TP,5x11,5	1	PC	SNA
C201	2401-000481	C-AL	10uF,20%,50V,WT,TP,5x11,5	1	PC	SNA
C300	2401-000481	C-AL	10uF,20%,50V,WT,TP,5x11,5	1	PC	SNA
C326	2401-000481	C-AL	10uF,20%,50V,WT,TP,5x11,5	1	PC	SNA
C405	2401-000481	C-AL	10uF,20%,50V,WT,TP,5x11,5	1	PC	SNA
C407	2401-000481	C-AL	10uF,20%,50V,WT,TP,5x11,5	1	PC	SNA
C803	2401-002438	C-AL	47uF,20%,50V,WT,TP,6.3x11,5mm	1	PC	SNA
C807	2401-002438	C-AL	47uF,20%,50V,WT,TP,6.3x11,5mm	1	PC	SNA
C811	2401-002438	C-AL	47uF,20%,50V,WT,TP,6.3x11,5mm	1	PC	SNA
C813	2401-002438	C-AL	47uF,20%,50V,WT,TP,6.3x11,5mm	1	PC	SNA
C107	2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	1	PC	SNA
C109	2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	1	PC	SNA
C112	2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	1	PC	SNA
C114	2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	1	PC	SNA
C115	2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	1	PC	SNA
C117	2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	1	PC	SNA
C120	2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	1	PC	SNA
C121	2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	1	PC	SNA
C401	2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	1	PC	SNA
C403	2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	1	PC	SNA
	DB93-11368A	ASSY PCB SMD	RC100DHXGA, RC140DHXGA,Inverter #6, 3phase	1	PC	SNA
SOLDER CREAM	0202-001459	SOLDER-CREAM	S3X58-M405,D20~38um,96.5Sn/3Ag/0.5Cu,FLUX 5%	3.8	G	SNA
D107	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D300	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D301	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D303	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D304	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D600	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D601	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D700	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D701	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D702	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D703	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D901	0401-001099	DIODE-SWITCHING	1N4148WS,75V,150mA,SOD-323,TP	1	PC	SNA
D104	0402-001192	DIODE-RECTIFIER	ES2D,200V,2A,SMB,TP	1	PC	SNA
D105	0402-001192	DIODE-RECTIFIER	ES2D,200V,2A,SMB,TP	1	PC	SNA
D100	0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	1	PC	SNA
D103	0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	1	PC	SNA
D400	0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	1	PC	SNA
D401	0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	1	PC	SNA

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INVERTER PCB(cont.)

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
D800	0402-001993	DIODE-RECTIFIER	STTH112,1200V,1A,SMA	1	PC	SNA
D801	0402-001993	DIODE-RECTIFIER	STTH112,1200V,1A,SMA	1	PC	SNA
D802	0402-001993	DIODE-RECTIFIER	STTH112,1200V,1A,SMA	1	PC	SNA
ZD600	0403-000282	DIODE-ZENER	MMBZ5232B,5%,300mW,SOT-23,TP	1	PC	SNA
ZD700	0403-000282	DIODE-ZENER	MMBZ5232B,5%,300mW,SOT-23,TP	1	PC	SNA
ZD701	0403-000282	DIODE-ZENER	MMBZ5232B,5%,300mW,SOT-23,TP	1	PC	SNA
ZD801	0403-001816	DIODE-ZENER	1SAM5934BT3,22.8/25.2V,1500mW,SMA,TP	1	PC	SNA
ZD802	0403-001816	DIODE-ZENER	1SAM5934BT3,22.8/25.2V,1500mW,SMA,TP	1	PC	SNA
ZD803	0403-001816	DIODE-ZENER	1SAM5934BT3,22.8/25.2V,1500mW,SMA,TP	1	PC	SNA
D305	0404-001020	DIODE-SCHOTTKY	BAT54C,30V,200mA,SOT-23,TP	1	PC	SNA
Q500	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,180-390	1	PC	SNA
Q400	0504-000127	TR-DIGITAL	FJV3102R,NPN,200mW,10K/10Kohm,SOT-23,TP	1	PC	SNA
Q401	0504-000127	TR-DIGITAL	FJV3102R,NPN,200mW,10K/10Kohm,SOT-23,TP	1	PC	SNA
IC200	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	PC	SNA
LED100	0601-001816	LED	SMD,Y-GRN,1.6X0.8X0.55MM,570NM,1.6X0.8X0.55MM	1	PC	SNA
LED101	0601-001816	LED	SMD,Y-GRN,1.6X0.8X0.55MM,570NM,1.6X0.8X0.55MM	1	PC	SNA
LED102	0601-001816	LED	SMD,Y-GRN,1.6X0.8X0.55MM,570NM,1.6X0.8X0.55MM	1	PC	SNA
LED301	0601-001816	LED	SMD,Y-GRN,1.6X0.8X0.55MM,570NM,1.6X0.8X0.55MM	1	PC	SNA
LED600	0601-001816	LED	SMD,Y-GRN,1.6X0.8X0.55MM,570NM,1.6X0.8X0.55MM	1	PC	SNA
LED300	0601-001954	LED	SMD(TOP VIEW),YEL,1.6x0.8x0.8mm,587nm,1.6x0.8x0.8mm	1	PC	SNA
LED302	0601-002345	LED	SMD,RED,1.6x0.8x0.55mm,660nm,1.6x0.8x0.55mm	1	PC	SNA
PC111	0604-001002	PHOTO-COUPLER	TR,100-600%,200mW,SOP-4,TP	1	PC	SNA
PC400	0604-001002	PHOTO-COUPLER	TR,100-600%,200mW,SOP-4,TP	1	PC	SNA
PC401	0604-001002	PHOTO-COUPLER	TR,100-600%,200mW,SOP-4,TP	1	PC	SNA
PC402	0604-001002	PHOTO-COUPLER	TR,100-600%,200mW,SOP-4,TP	1	PC	SNA
PC403	0604-001002	PHOTO-COUPLER	TR,100-600%,200mW,SOP-4,TP	1	PC	SNA
PC500	0604-001002	PHOTO-COUPLER	TR,100-600%,200mW,SOP-4,TP	1	PC	SNA
PC501	0604-001002	PHOTO-COUPLER	TR,100-600%,200mW,SOP-4,TP	1	PC	SNA
PC502	0604-001002	PHOTO-COUPLER	TR,100-600%,200mW,SOP-4,TP	1	PC	SNA
PC900	0604-001002	PHOTO-COUPLER	TR,100-600%,200mW,SOP-4,TP	1	PC	SNA
IC300	0801-002530	IC-CMOS LOGIC	74VHCT245,TRANSCEIVER,TSSOP,20P,173MIL,OCTAL,TP,PLASTIC,3-STATE,-,0.36V,-40to+85	1	PC	SNA
IC102	1203-002948	IC-POSI.ADJUST REG.	TL431ACD,SOP,8P,4.9X3.9MM,PLASTIC,36V,1.5W,0TO+70C,150MA,2.44/2.55V,TP	1	PC	SNA
IC100	1203-005454	IC-POSI.FIXED REG.	LD1117S33-HF,SOT-223,4P,6.5x3.5mm,PLASTIC,3.267/3.333,-40to+125C,0.8,TP	1	PC	SNA
R808	2007-000043	R-CHIP	1Kohm,1%,1/10W,TP,1608	1	PC	SNA
R339	2007-000070	R-CHIP	0ohm,5%,1/10W,TP,1608	1	PC	SNA
R308	2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	PC	SNA
R337	2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	PC	SNA
R800	2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	PC	SNA
R801	2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	PC	SNA
R803	2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	PC	SNA
R805	2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	PC	SNA
R811	2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	PC	SNA
R813	2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	PC	SNA
R814	2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	PC	SNA
R325	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R326	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R327	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R500	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA

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INVERTER PCB(cont.)

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
R502	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R506	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R900	2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	PC	SNA
R320	2007-000077	R-CHIP	470ohm,5%,1/10W,TP,1608	1	PC	SNA
R328	2007-000077	R-CHIP	470ohm,5%,1/10W,TP,1608	1	PC	SNA
R505	2007-000077	R-CHIP	470ohm,5%,1/10W,TP,1608	1	PC	SNA
R305	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R306	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R307	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R309	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R310	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R312	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R313	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R314	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R317	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R318	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R319	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R501	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R503	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R504	2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	PC	SNA
R809	2007-000080	R-CHIP	2Kohm,5%,1/10W,TP,1608	1	PC	SNA
R100	2007-000082	R-CHIP	3.3Kohm,5%,1/10W,TP,1608	1	PC	SNA
R105	2007-000082	R-CHIP	3.3Kohm,5%,1/10W,TP,1608	1	PC	SNA
R109	2007-000082	R-CHIP	3.3Kohm,5%,1/10W,TP,1608	1	PC	SNA
R111	2007-000082	R-CHIP	3.3Kohm,5%,1/10W,TP,1608	1	PC	SNA
R600	2007-000082	R-CHIP	3.3Kohm,5%,1/10W,TP,1608	1	PC	SNA
R300	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R301	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R302	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R311	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R315	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R321	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R322	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R323	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R324	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R329	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R330	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R331	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R332	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R333	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R334	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R335	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R336	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R400	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R401	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R406	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R407	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R614	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R615	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R700	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA

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INVERTER PCB(cont.)

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
R701	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R702	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R703	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R905	2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	PC	SNA
R403	2007-000087	R-CHIP	6.8Kohm,5%,1/10W,TP,1608	1	PC	SNA
R410	2007-000087	R-CHIP	6.8Kohm,5%,1/10W,TP,1608	1	PC	SNA
R812	2007-000087	R-CHIP	6.8Kohm,5%,1/10W,TP,1608	1	PC	SNA
R303	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R316	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R402	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R404	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R409	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R411	2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	PC	SNA
R340	2007-000109	R-CHIP	1Mohm,5%,1/10W,TP,1608	1	PC	SNA
R103	2007-000111	R-CHIP	6.8ohm,5%,1/10W,TP,1608	1	PC	SNA
R807	2007-000239	R-CHIP	1.5Kohm,1%,1/10W,TP,1608	1	PC	SNA
R901	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	PC	SNA
R902	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	PC	SNA
R903	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	PC	SNA
R904	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	PC	SNA
R906	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	PC	SNA
R907	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	PC	SNA
R908	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	PC	SNA
R909	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	PC	SNA
R802	2007-000308	R-CHIP	10ohm,5%,1/8W,TP,2012	1	PC	SNA
R804	2007-000308	R-CHIP	10ohm,5%,1/8W,TP,2012	1	PC	SNA
R806	2007-000308	R-CHIP	10ohm,5%,1/8W,TP,2012	1	PC	SNA
R616	2007-000385	R-CHIP	14.3Kohm,1%,1/4W,TP,3216	1	PC	SNA
R113	2007-000619	R-CHIP	24ohm,5%,1/4W,TP,3216	1	PC	SNA
R119	2007-000619	R-CHIP	24ohm,5%,1/4W,TP,3216	1	PC	SNA
R114	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R115	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R116	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R117	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R613	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R617	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R618	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R619	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R620	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R621	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R622	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R623	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	1	PC	SNA
R118	2007-000929	R-CHIP	470ohm,1%,1/10W,TP,1608	1	PC	SNA
R102	2007-000950	R-CHIP	47ohm,5%,1/4W,TP,3216	1	PC	SNA
R110	2007-000950	R-CHIP	47ohm,5%,1/4W,TP,3216	1	PC	SNA
R112	2007-000950	R-CHIP	47ohm,5%,1/4W,TP,3216	1	PC	SNA
R405	2007-001118	R-CHIP	680ohm,5%,1/8W,TP,2012	1	PC	SNA
R408	2007-001118	R-CHIP	680ohm,5%,1/8W,TP,2012	1	PC	SNA
R341	2007-002454	R-CHIP	5.1Mohm,5%,1/10W,TP,1608	1	PC	SNA

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INVERTER PCB(cont.)

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
R107	2007-007342	R-CHIP	1.82Kohm,1%,1/10W,TP,1608	1	PC	SNA
R106	2007-007445	R-CHIP	9.09Kohm,1%,1/10W,TP,1608	1	PC	SNA
R810	2007-007735	R-CHIP	91ohm,1%,1/10W,TP,1608	1	PC	SNA
R601	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R602	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R603	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R604	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R605	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R606	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R607	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R608	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R609	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R610	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R611	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
R612	2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	1	PC	SNA
C303	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C317	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C318	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C327	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C400	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C402	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C500	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C501	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C502	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C504	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C505	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C814	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	PC	SNA
C301	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C302	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C309	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C313	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C316	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C600	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C601	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C700	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C702	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C703	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C705	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C801	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C805	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C809	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C815	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C817	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C818	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C819	2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,TP,1608	1	PC	SNA
C319	2203-002002	C-CER,CHIP	0.033nF,5%,50V,NP0,TP,1608	1	PC	SNA
C320	2203-002002	C-CER,CHIP	0.033nF,5%,50V,NP0,TP,1608	1	PC	SNA
C321	2203-002002	C-CER,CHIP	0.033nF,5%,50V,NP0,TP,1608	1	PC	SNA
C322	2203-002002	C-CER,CHIP	0.033nF,5%,50V,NP0,TP,1608	1	PC	SNA
C323	2203-002002	C-CER,CHIP	0.033nF,5%,50V,NP0,TP,1608	1	PC	SNA

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INVERTER PCB(cont.)

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
C324	2203-002002	C-CER,CHIP	0.033nF,5%,50V,NP0,TP,1608	1	PC	SNA
C816	2203-002398	C-CER,CHIP	22nF,10%,50V,X7R,1608	1	PC	SNA
C100	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C105	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C108	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C110	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C111	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C116	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C118	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C122	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C126	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C200	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C307	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C308	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C310	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C311	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C312	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C314	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C315	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C503	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C608	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C701	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C704	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C800	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C802	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C804	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C806	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C808	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C810	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C812	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C900	2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	PC	SNA
C404	2203-006104	C-CER,CHIP	1000nF,10%,50V,X7R,TP,3225,2.5T	1	PC	SNA
C406	2203-006104	C-CER,CHIP	1000nF,10%,50V,X7R,TP,3225,2.5T	1	PC	SNA
C304	2203-006348	C-CER,CHIP	1000nF,10%,25V,X5R,TP,1608	1	PC	SNA
C305	2203-006348	C-CER,CHIP	1000nF,10%,25V,X5R,TP,1608	1	PC	SNA
C325	2203-006348	C-CER,CHIP	1000nF,10%,25V,X5R,TP,1608	1	PC	SNA
C328	2203-006348	C-CER,CHIP	1000nF,10%,25V,X5R,TP,1608	1	PC	SNA
X300	2802-001211	RESONATOR-CERAMIC	8MHZ,0.1%,TP,3.2X1.3X0.9 MM	1	PC	SNA
IC600	3201-001860	SENSOR MAG	ACS710KLATR-12CB-T,37.5A,-40to+125C,8V	1	PC	SNA
IC700	3201-001860	SENSOR MAG	ACS710KLATR-12CB-T,37.5A,-40to+125C,8V	1	PC	SNA
IC701	3201-001860	SENSOR MAG	ACS710KLATR-12CB-T,37.5A,-40to+125C,8V	1	PC	SNA
PCB	DB41-01033A	PCB MAIN-INVERTER	RC100DHXGA, RC100PHXGA, RC125PHXGA, RC125DHXGA,FR-4,2,ver 0.8,T1.6,220*195,UB1, UB2,Outdoor,2oz, Inverter Platform #6,60	1	PC	SNA
IC201	DB91-01179A	ASSY-MIC	Global 4 way Outdoor Inverter MICOM,STM-1043-OS, LM3S817, 48LQFP, ROM 64KB	1	PC	SNA
	DB09-00591A	IC MICOM	LM3S817,48,DC3V,50 MHz,LQFP,LQFP,LQFP,-40 ~ 85,64KB,LQFP	1	PC	SNA

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EMI PCB

Location	Code	Description	Spec.	Q`ty	Unit	SA/ SNA
	DB93-11111A	ASSY PCB SUB-EMI	GLOBAL-4WAY OUTDOOR,Inverter Platform #6 3Phase EMI,N	1	PC	SA
ADHESIVE-SILICON	0201-001982	ADHESIVE-SIL	TSE3854DS-W,White,2.2,MIL-A-46146B,UL94V-0	0.01	KG	SNA
VA01	1405-001204	VARISTOR	670Vdc,4500A,17x6.3mm,BK	1	PC	SNA
VA02	1405-001204	VARISTOR	670Vdc,4500A,17x6.3mm,BK	1	PC	SNA
VA03	1405-001204	VARISTOR	670Vdc,4500A,17x6.3mm,BK	1	PC	SNA
VA04	1405-001204	VARISTOR	670Vdc,4500A,17x6.3mm,BK	1	PC	SNA
VA05	1405-001204	VARISTOR	670Vdc,4500A,17x6.3mm,BK	1	PC	SNA
VA06	1405-001204	VARISTOR	670Vdc,4500A,17x6.3mm,BK	1	PC	SNA
VA07	1405-001204	VARISTOR	670Vdc,4500A,17x6.3mm,BK	1	PC	SNA
VA08	1405-001204	VARISTOR	670Vdc,4500A,17x6.3mm,BK	1	PC	SNA
VA09	1405-001204	VARISTOR	670Vdc,4500A,17x6.3mm,BK	1	PC	SNA
VA10	1405-001204	VARISTOR	670Vdc,4500A,17x6.3mm,BK	1	PC	SNA
R01	2003-002038	R-METAL OXIDE(S)	1Mohm,5%,2W,AA,TP,4x12mm	1	PC	SNA
R02	2003-002038	R-METAL OXIDE(S)	1Mohm,5%,2W,AA,TP,4x12mm	1	PC	SNA
R03	2003-002038	R-METAL OXIDE(S)	1Mohm,5%,2W,AA,TP,4x12mm	1	PC	SNA
YC01	2201-000024	C-CERAMIC,DISC	4.7nF,20%,250V,Y5U,TP,16x7mm,7.5mm	1	PC	SNA
YC02	2201-000024	C-CERAMIC,DISC	4.7nF,20%,250V,Y5U,TP,16x7mm,7.5mm	1	PC	SNA
C11	2201-000153	C-CERAMIC,DISC	10nF,+80-20%,250V,Y5V,-,14.6x6mm,7.5	1	PC	SNA
C12	2201-000153	C-CERAMIC,DISC	10nF,+80-20%,250V,Y5V,-,14.6x6mm,7.5	1	PC	SNA
C13	2201-000153	C-CERAMIC,DISC	10nF,+80-20%,250V,Y5V,-,14.6x6mm,7.5	1	PC	SNA
C14	2201-000153	C-CERAMIC,DISC	10nF,+80-20%,250V,Y5V,-,14.6x6mm,7.5	1	PC	SNA
C08	2301-001285	C-FILM,LEAD-PPF	680nF,10%,275V,BK,31x11x21mm	1	PC	SNA
C09	2301-001285	C-FILM,LEAD-PPF	680nF,10%,275V,BK,31x11x21mm	1	PC	SNA
C10	2301-001285	C-FILM,LEAD-PPF	680nF,10%,275V,BK,31x11x21mm	1	PC	SNA
C01	2301-001853	C-FILM,LEAD	2200nF,10%,275V,BK,18X28X31	1	PC	SNA
C02	2301-001853	C-FILM,LEAD	2200nF,10%,275V,BK,18X28X31	1	PC	SNA
C03	2301-001853	C-FILM,LEAD	2200nF,10%,275V,BK,18X28X31	1	PC	SNA
F101-1	3601-001426	USE-CARTRIDGE	500,25A,SLO-BLO,FIBER,10.3x38.1mm	1	PC	SNA
F102-1	3601-001426	USE-CARTRIDGE	500,25A,SLO-BLO,FIBER,10.3x38.1mm	1	PC	SNA
F103-1	3601-001426	USE-CARTRIDGE	500,25A,SLO-BLO,FIBER,10.3x38.1mm	1	PC	SNA
F101	3602-001040	FUSE-CLIP	250,30A,4MOhm	1	PC	SNA
F102	3602-001040	FUSE-CLIP	250,30A,4MOhm	1	PC	SNA
F103	3602-001040	FUSE-CLIP	250,30A,4MOhm	1	PC	SNA
CN01	3711-000203	HEADER-BOARD TO CABLE	1WALL,2P/3P,1R,7.92mm,STRAIGHT,SN,WHT	1	PC	SNA
R-OUT	3712-001139	CONNECTOR-TERMINAL	TAB,MALE,6.35x0.8mm	1	PC	SNA
S-OUT	3712-001139	CONNECTOR-TERMINAL	TAB,MALE,6.35x0.8mm	1	PC	SNA
T-OUT	3712-001139	CONNECTOR-TERMINAL	TAB,MALE,6.35x0.8mm	1	PC	SNA
FT11	DB27-00033A	COIL CHOKE	FILTER,S50,-0%,5A,14mH	1	PC	SNA
FT01	DB27-00039A	COIL CHOKE	SSC5122020B,UH140GAV,2mH,+-20%,50mOHM,18A,Φ51x31x13,14,Φ51x31x13, PBT,21,2.2,BOX,-25 to +85C	1	PC	SNA
FT02	DB27-00039A	COIL CHOKE	SSC5122020B,UH140GAV,2mH,+-20%,50mOHM,18A,Φ51x31x13,14,Φ51x31x13, PBT,21,2.2,BOX,-25 to +85C	1	PC	SNA
PCB	DB41-01035A	PCB SUB-EMI	GLOBAL-4WAY OUTDOOR,FR-4,2,ver 2.3,T1.6,130*230,UB1, UB2,Outdoor,Inverter Platform #6 EMI,600	1	PC	SNA
DSA01	DB47-00016A	POSISTOR	DSA-332MA,2pF MAX,100MOhm,ASM-3500	1	PC	SNA
ASSY CW EARTH	DB93-05379F	ASSY CONNECTOR WIRE-EARTH	RC140RHXEA	1	PC	SNA
ASSY CW POWER-RSTN	DB93-10811A	ASSY CONNECTOR WIRE-EMI TO TERMINAL POWE	RC160RHXH1	1	PC	SNA
ASSY CW POWER-TN	DB93-10871A	ASSY CONNECTOR WIRE-POWER	RC160RHXH1	1	PC	SNA

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HEATER PCB

REF	Part No.	Spec
CN02	3711-003406	HEADER-BOARD TO CABLE;1WALL,2P,1R,7.92MM,STRAIGHT, (YEL)
CN03	3711-000203	HEADER-BOARD TO CABLE;1WALL,2P/3P,1R,7.92mm,STRAIG (WHT)
FUSE-L	3602-001012	FUSE-BLOCK;500V,-,100MOhm
FUSE-L	3601-000416	250V,1A,FAST-ACTING,GLASS,5.2x20mm
FUSE-N	3602-001012	FUSE-BLOCK;500V,-,100MOhm
FUSE-N	3601-000416	250V,1A,FAST-ACTING,GLASS,5.2x20mm
JP01	DB47-90005A	JUMPER WIRE;TA0.6PI/52MM,P0509-400-108,-,-
VA01	1405-000154	VARISTOR;460Vdc,4500A,17.5x7.5mm,BK,920V,600pF
PCB	DB41-01132A	PCB SUB - HEATER

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6. Wiring Diagram

6-1 Control Kit

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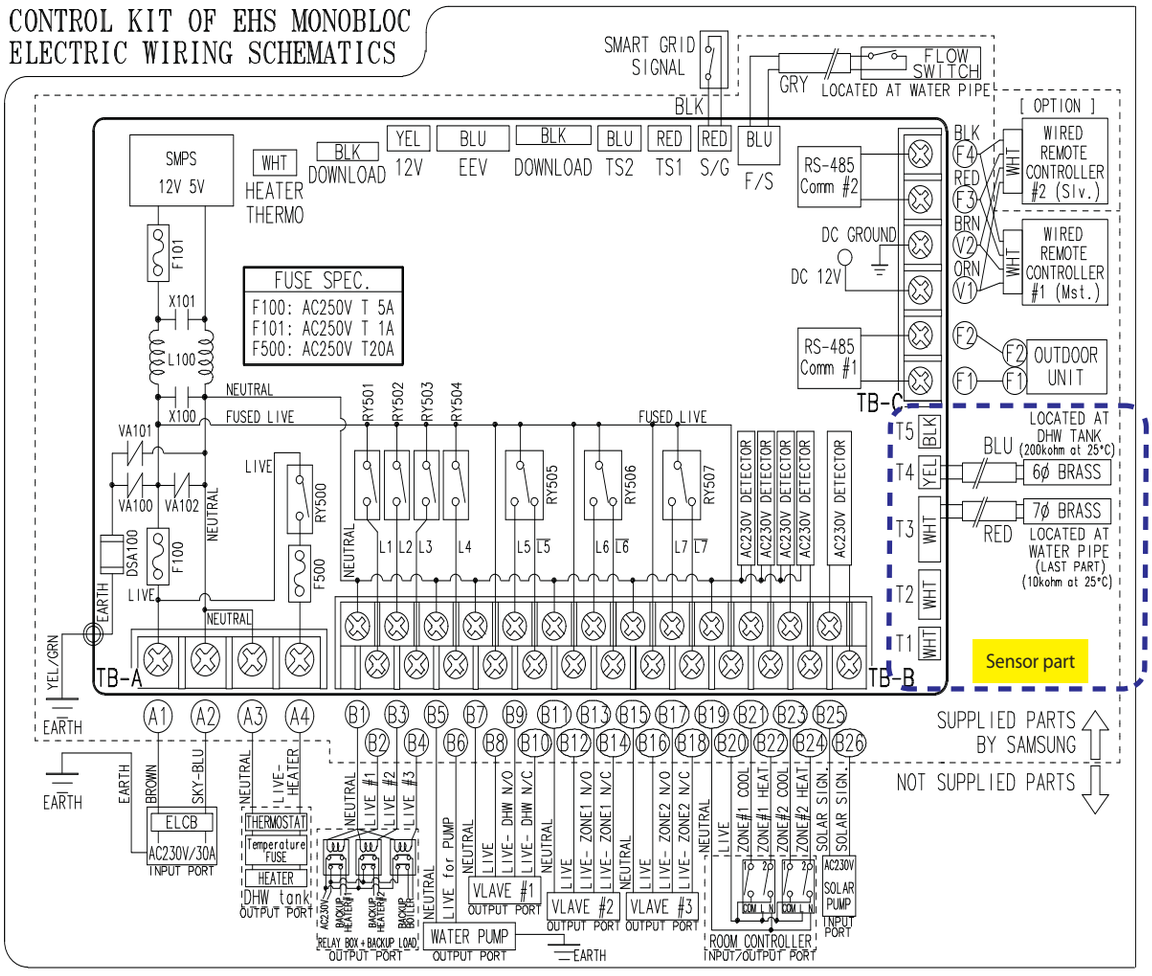

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3Phase / 2FAN Model Diagram

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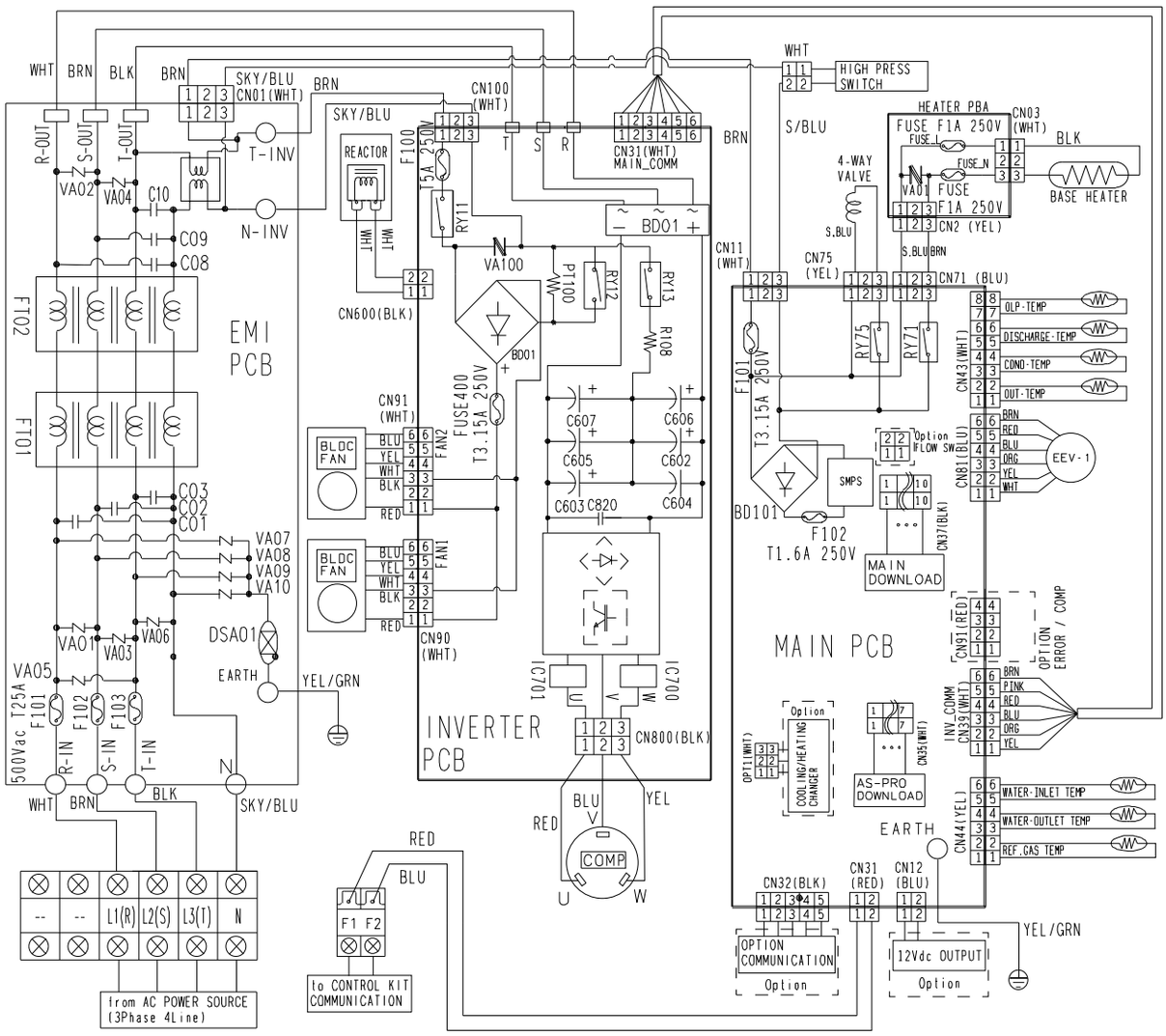

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1Phase / 2FAN Model

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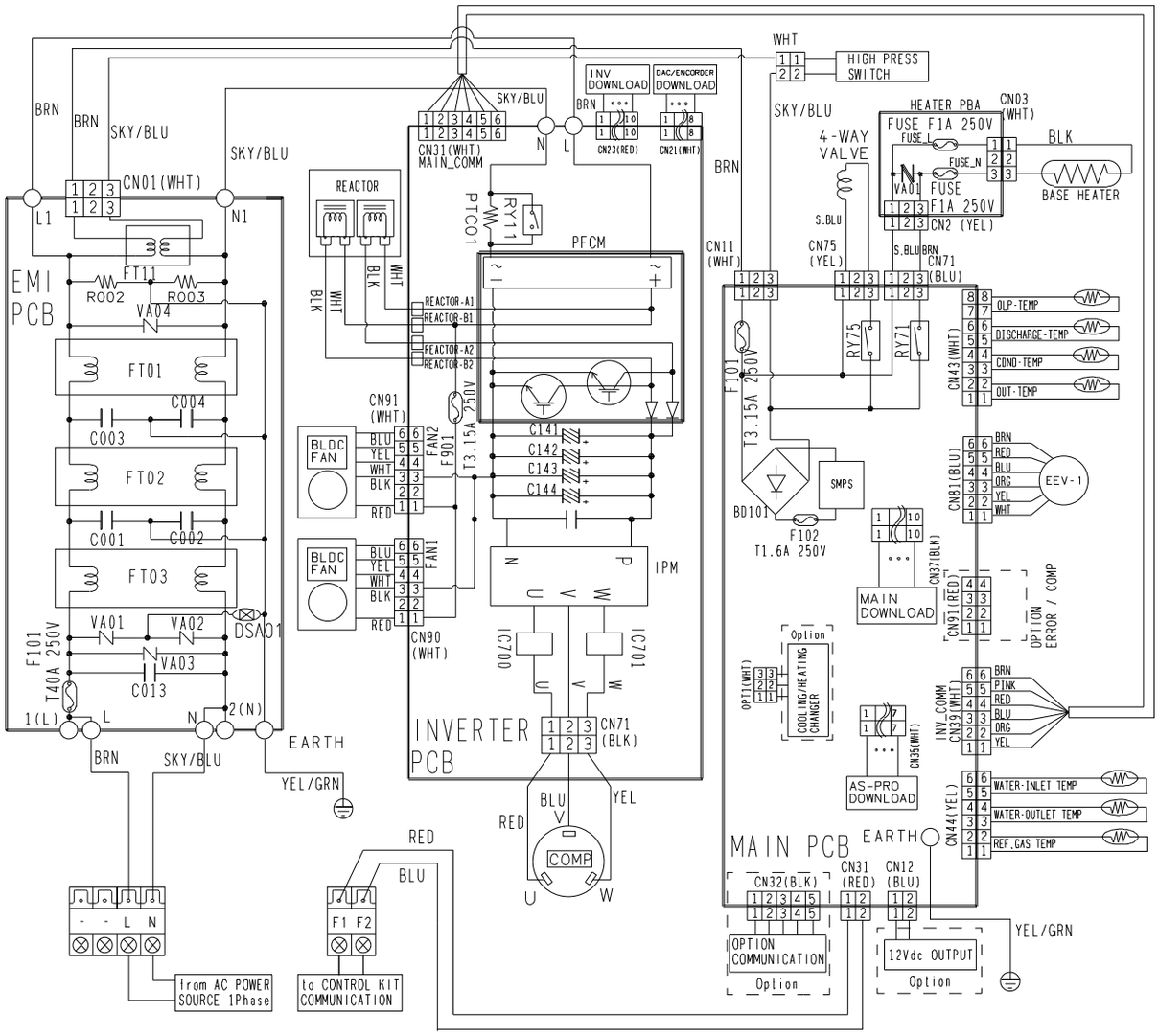

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MEMO

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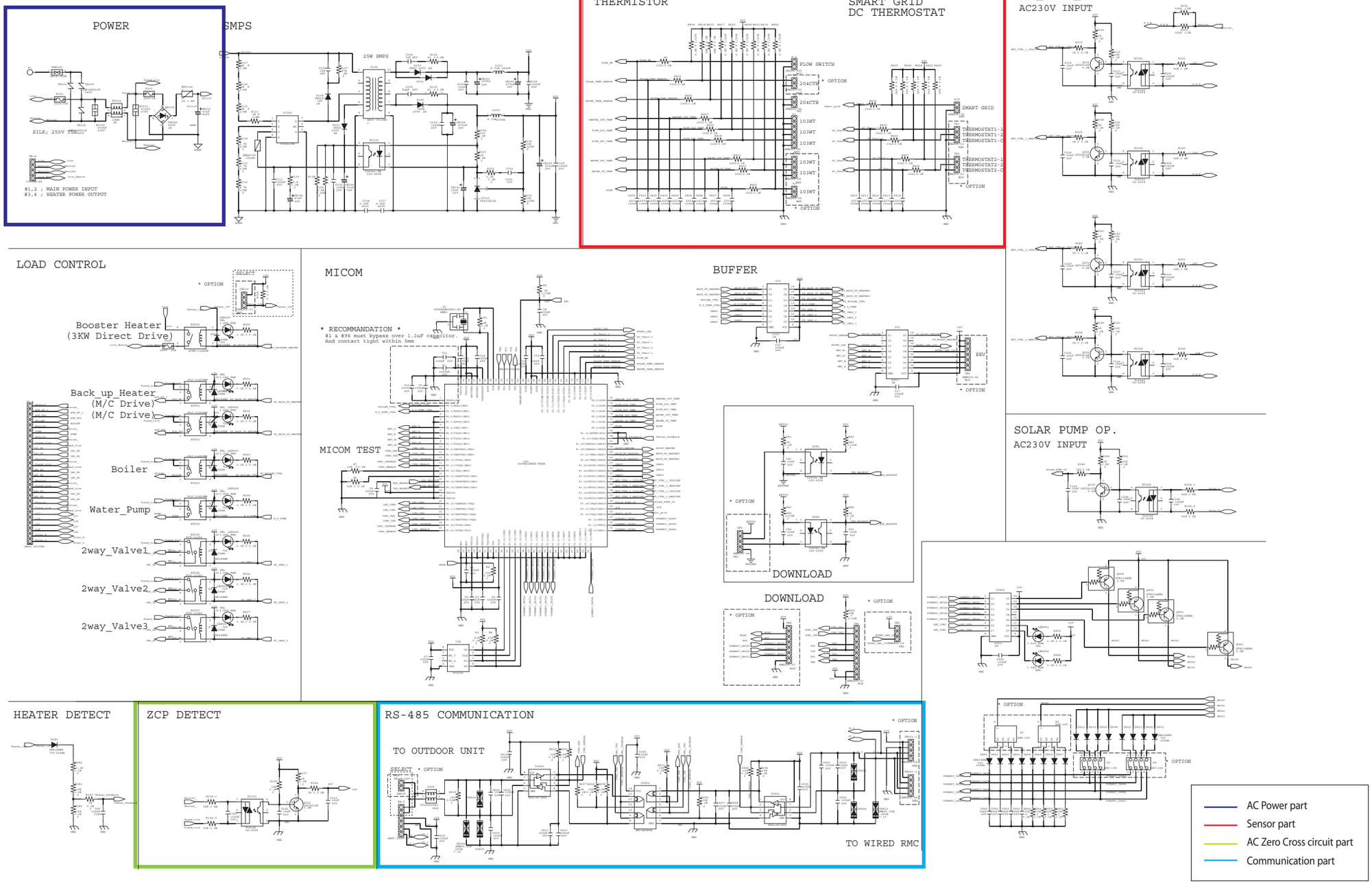
7. Schematic Diagram

7-1 Control Kit



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HEATER PBA

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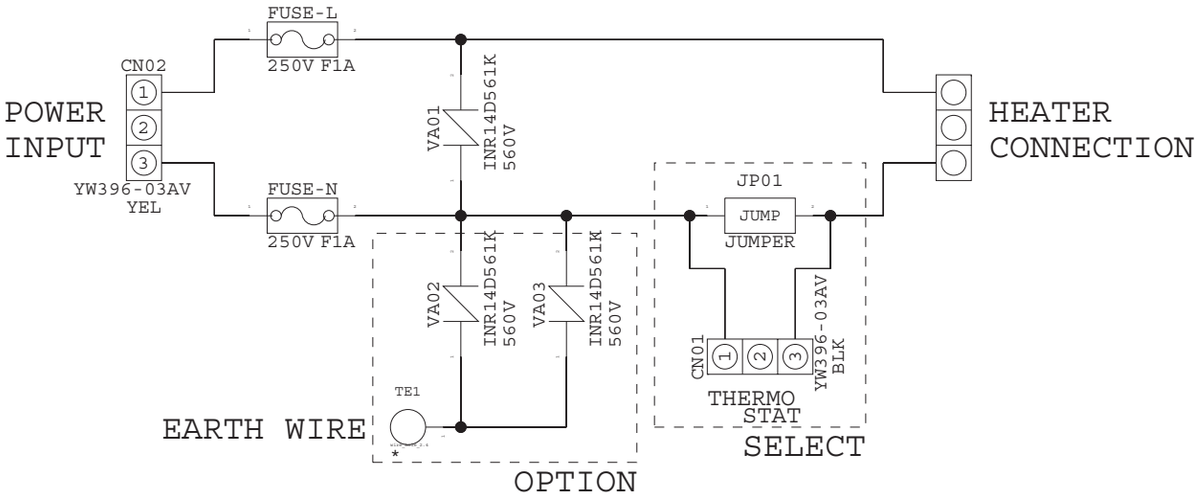

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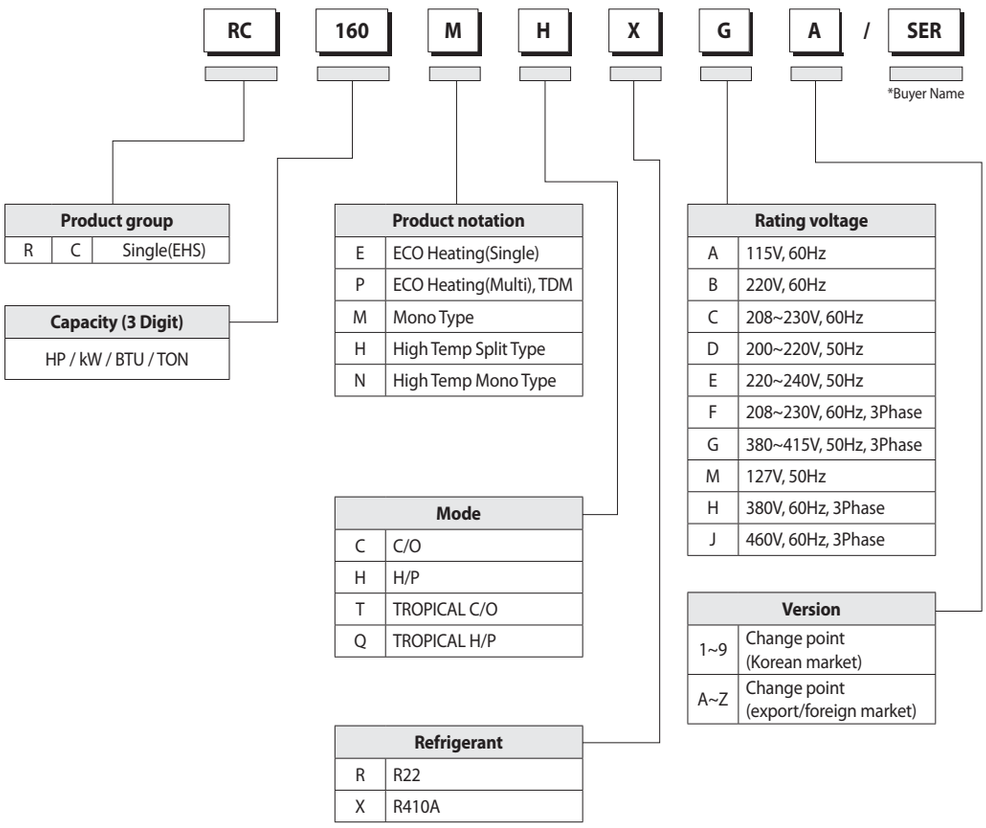
8. Reference Sheet

8-1 Index for Model Name

8-1-1 Outdoor Unit

Model Code



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8-2 Refrigerant Circuit Diagram

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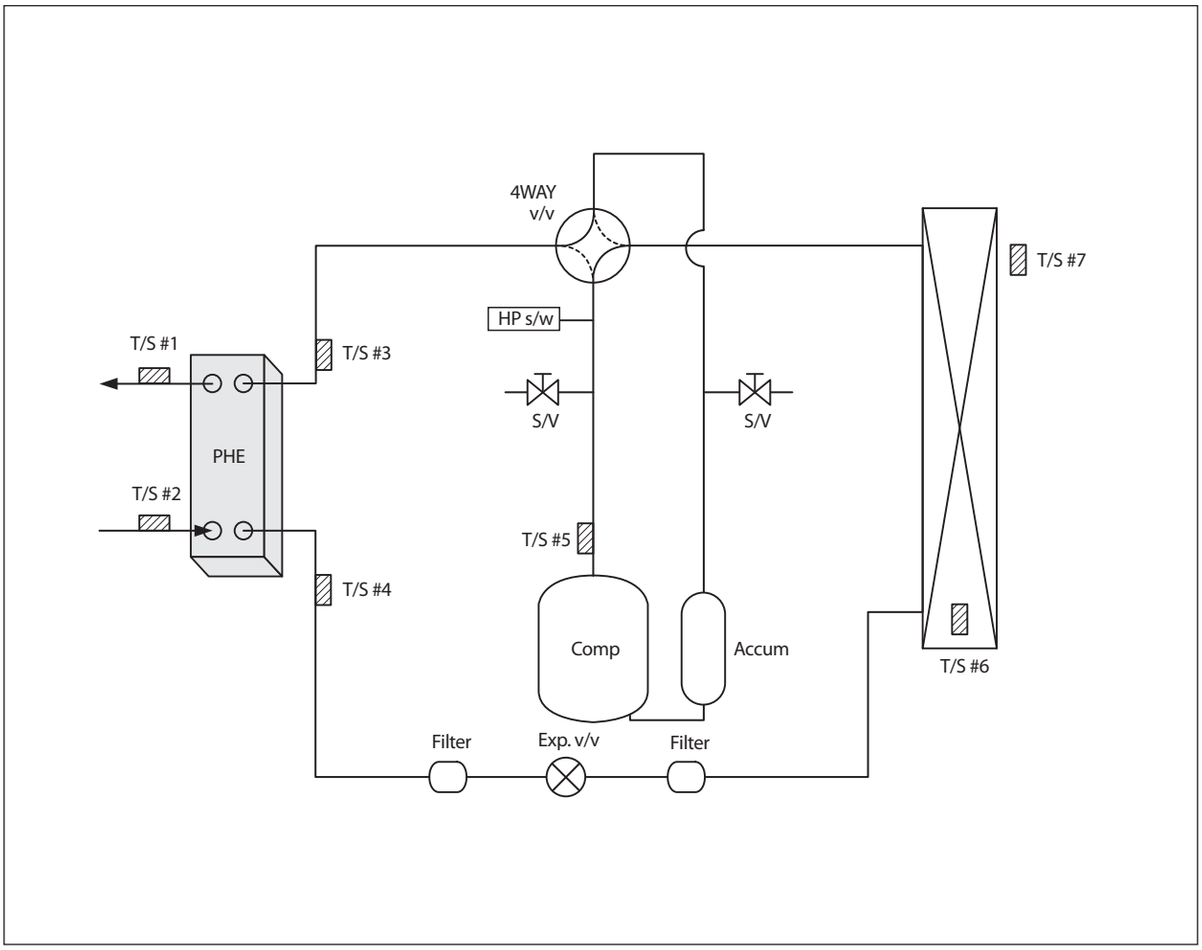

Part	Description
PHE	Plate heat exchanger
T/S #1	For water outlet temp sensor
T/S #2	For water inlet temp sensor
T/S #3	For PHE in temp
T/S #4	For PHE out temp
T/S #5	For discharge temp
T/S #6	For cond temp
T/S #7	For ambient temp sensor
S/V	Service valve ¼ inch
Accum	Accumulator

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SAMSUNG ELECTRONICS

GSPN(Global Service Partner Network)

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